

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1415	(resorcinol same (uv or ultraviolet))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/16 09:54
L2	70937	((mask or photomask or laser) same (uv or ultraviolet))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/16 09:42
L3	109	I1 and I2	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/16 09:42
L4	547	(resorcinol same (rearrangement or hydroxybenzophenone or fries or photofries))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/16 11:06
L5	2480	(resorcinol same (uv or ultraviolet or light or exposure))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/16 09:55
L6	312	I4 and I5	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/16 09:55
L7	307	I4 same I5	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/16 10:18
L8	3	de-2648367-\$.did. or jp-06148430-\$.did.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/16 10:19
L9	2	"4061652".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/16 10:28

## EAST Search History

L10	2	"6514594".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/16 10:28
L11	1260	(resorcinol same benzophenone)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/16 11:06
L12	25	(l11 same (fries or photofries))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2006/03/16 11:07

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651977 PATTERN

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L3   ANSWER 1 OF 47   CAPLUS   COPYRIGHT 2006 ACS on STN  
 AN   2005:1179354   CAPLUS  
 ED   Entered STN:   07 Nov 2005  
 TI   Mechanisms of direct and TiO<sub>2</sub>-photocatalysed UV degradation of phenylurea herbicides  
 AU   Canle Lopez, Moises; Fernandez, M. Isabel; Rodriguez, Santiago; Santaballa, J. Arturo; Steenken, Steen; Vulliet, Emmanuelle  
 CS   Grupo de Reactividade Quimica e Fotorreatividade, Departamento de Quimica Fisica e Enxeneria Quimica I, Universidade da Coruna, Galicia, 15008A, Spain  
 SO   ChemPhysChem (2005), 6(10), 2064-2074  
      CODEN: CPCHFT; ISSN: 1439-4235  
 PB   Wiley-VCH Verlag GmbH & Co. KGaA  
 DT   Journal  
 LA   English  
 CC   74 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 AB   Phenylurea herbicides undergo low-yield ( $\phi_{PI} < 15\%$ ) monophotonic photoionization upon 193-nm \*\*\*laser\*\*\* flash excitation. The so formed radical cations (phenylurea<sup>+</sup>) are highly acidic ( $-1.5 < pK_a < 0.5$ ) and deprotonate readily to yield the corresponding neutral radical (phenylurea $\cdot$ ). Pulse radiolysis expts. allowed limitation of the redn. potential of phenylurea<sup>+</sup> within 2.22 V vs. the normal hydrogen electrode (NHE)  $< E_{deg.}(\text{phenylurea}^+/\text{phenylurea}) < 2.43$  V vs. NHE. The main photoproducts of UVC ( $\lambda = 193$  nm) photodegrdn. of phenylureas correspond to a photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*. One-electron redn. with e<sup>-</sup>aq yields the corresponding radical anions (phenylurea<sup>-</sup>), for which  $4.3 < pK_a < 5.33$ . The rate consts. for reaction with e<sup>-</sup>aq show that in photocatalysis the generation of phenylurea<sup>-</sup> and O $\cdot$ -2 on the surface of the photocatalyst may be competitive. High reactivity toward e<sup>-</sup>aq is predicted from linear free-energy relationships (LFER) for phenylureas bearing electron-withdrawing groups. Reaction with HO $\cdot$  takes place mainly via addn. to the arom. ring and/or H. abstraction from a satd. carbon atom (98%), rather than one-electron oxidn. (2%). High reactivity toward oxidn. by HO $\cdot$  is predicted from LFER for phenylureas bearing electron-donating groups. Adsorption studies for TiO<sub>2</sub> in its polymorphic forms of rutile and anatase, as well as with the com. mixt. Degussa P-25, show photocatalysis is independent of the specific area of the catalyst. A variety of compds. are generated during the photocatalytic degrdn. of Diuron, while only two hydroxychloro derivs. are obsd. upon prolonged direct 365 nm irradiation. The photocatalytic degrdn. proceeds mainly by oxidn. of the Me group of the side chain, hydroxylation of the arom. ring, and dechlorination. The photoproducts of photocatalytic degrdn. differ from one polymorphic form of TiO<sub>2</sub> to another.

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AN 2005:700670 CAPLUS  
 DN 143:253330  
 ED Entered STN: 08 Aug 2005  
 TI Characterization of carbofuran photodegradation by-products by liquid chromatography/hybrid quadrupole time-of-flight mass spectrometry  
 AU Detomaso, Antonia; Mascolo, Giuseppe; Lopez, Antonio  
 CS Istituto di Ricerca Sulle Acque, C.N.R., Sezione di Bari, Bari, 70123, Italy  
 SO Rapid Communications in Mass Spectrometry (2005), 19(15), 2193-2202  
 CODEN: RCMSEF; ISSN: 0951-4198  
 PB John Wiley & Sons Ltd.  
 DT Journal  
 LA English  
 CC 61-3 (Water)  
 Section cross-reference(s): 4, 5, 19, 74, 80  
 AB The structural elucidation of byproducts arising from carbofuran photodegrdn. using a high-pressure UV lamp has been investigated by liq. chromatog./electrospray ionization tandem mass spectrometry (LC/ESI-MS/MS) employing a quadrupole time-of-flight mass spectrometer. Exact mass measurements of the [M+H]<sup>+</sup> ions of the byproducts and of product ions allowed the elemental formulas and related structures of seven photodegrdn. byproducts (resulting, resp., from photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*, hydroxylation of the benzene ring, oxidn. of the 2,3-dihydrobenzofuran ring, cleavage of the carbamate group, hydrolysis of the ether group and the newly obsd. radical coupling and decarboxylation processes) to be detd. confidently. Accurate mass measurements of product ions allowed ambiguities to be removed concerning neutral losses having the same nominal mass, namely CO and C<sub>2</sub>H<sub>4</sub>, allowing the fragmentation \*\*\*patterns\*\*\* to be rationalized.  
 ST carbofuran photodegrdn byproduct liq chromatog hybrid quadrupole time flight; water pollution carbofuran photodegrdn byproduct LCMS hybrid quadrupole TOF  
 IT Groundwater pollution  
 (characterization of carbofuran photodegrdn. byproducts by liq. chromatog./hybrid quadrupole time-of-flight mass spectrometry)  
 IT Water purification  
 (photolytic; characterization of carbofuran photodegrdn. byproducts by liq. chromatog./hybrid quadrupole time-of-flight mass spectrometry)  
 IT 1563-66-2, Carbofuran  
 RL: ANT (Analyte); CPS (Chemical process); PEP (Physical, engineering or chemical process); POL (Pollutant); REM (Removal or disposal); ANST (Analytical study); OCCU (Occurrence); PROC (Process)  
 (characterization of carbofuran photodegrdn. byproducts by liq. chromatog./hybrid quadrupole time-of-flight mass spectrometry)  
 IT 16655-82-6, 3-Hydroxy carbofuran 863488-69-1 863488-70-4 863495-04-9 863495-05-0 863495-06-1  
 RL: ANT (Analyte); FMU (Formation, unclassified); POL (Pollutant); ANST (Analytical study); FORM (Formation, nonpreparative); OCCU (Occurrence)  
 (characterization of carbofuran photodegrdn. byproducts by liq. chromatog./hybrid quadrupole time-of-flight mass spectrometry)

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L3 ANSWER 3 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:453135 CAPLUS

DN 144:107872

ED Entered STN: 27 May 2005

TI Triplet- vs. singlet-state imposed photochemistry. The role of substituent effects on the photo-Fries and photodissociation reaction of triphenylmethyl silanes

AU Zarkadis, Antonios K.; Georgakilas, Vassilios; Perdikomatis, Gerasimos P.; Trifonov, Anton; Gurzadyan, Gagik G.; Skoulika, Stavroula; Siskos, Michael G.

CS Department of Chemistry, University of Ioannina, Ioannina, 451 10, Greece

SO Photochemical & Photobiological Sciences (2005), 4(6), 469-480

CODEN: PPSHCB; ISSN: 1474-905X

PB Royal Society of Chemistry

DT Journal

LA English

CC 22-6 (Physical Organic Chemistry)

Section cross-reference(s): 29, 35, 74

AB The photochem. of three structurally very similar triphenylmethylsilanes 1, 2, 3 [p-X-C<sub>6</sub>H<sub>4</sub>-CPh<sub>2</sub>-SiMe<sub>3</sub>: X = PhCO, 1; H, 2; Ph-spiro-(OCH<sub>2</sub>CH<sub>2</sub>O)C, 3] is described by means of 248 and 308 nm nanosecond \*\*\*laser\*\*\* flash photolysis (ns-LFP), femtosecond LFP, EPR spectroscopy, emission spectroscopy (fluorescence, phosphorescence), ns-pulse radiolysis (ns-PR), photoproduct anal. studies in MeCN, and X-ray crystallog. anal. of the two key-compds. 1 and 2. The photochem. behavior of 1, 2 and 3 is discussed and compared with that of a fourth one, 4, bearing on the p-position an amino group (X = Me<sub>2</sub>N) and whose detailed photochem. we reported earlier (J. Org. Chem., 2000, 65, 4274-4280). Silane 1 undergoes on irradiation with 248 and 308 nm \*\*\*laser\*\*\* light a fast photodissociation of the C-Si bond giving the p-(benzoyl)triphenylmethyl radical (1.bul.) with a rate constant of  $k_{\text{diss}} = 3 \times 10^7 \text{ s}^{-1}$ . The formation of 1.bul. is a one-quantum process and takes place via the carbonyl triplet excited state with high quantum yield ( $\Phi_{\text{H.rad}} = 0.9$ ); the intervention of the triplet state is clearly demonstrated through the phosphorescence spectrum and quenching experiments with ferrocene ( $k_q = 9.3 \times 10^9 \text{ M}^{-1} \text{ s}^{-1}$ ), Et<sub>3</sub>N ( $1.1 \times 10^9 \text{ M}^{-1} \text{ s}^{-1}$ ), and styrene ( $3.1 \times 10^9 \text{ M}^{-1} \text{ s}^{-1}$ ) giving quenching rate constants very similar to those of benzophenone. For comparative reasons radical 1.bul. was generated independently from p-(benzoyl)triphenylmethyl bromide via pulse radiolysis in THF and its absorption coefficient at  $\lambda_{\text{max}} = 340 \text{ nm}$  was determined ( $\epsilon = 27770 \text{ M}^{-1} \text{ cm}^{-1}$ ). We found thus that the p-PhCO-deriv. 1 behaves similarly to the p-Me<sub>2</sub>N one 4 (the latter giving the p-(dimethylamino)triphenylmethyl radical with  $\Phi_{\text{H.rad}} = 0.9$ ), irrespectively of their completely different ground state electronic properties. In contrast, compounds 2, 3 that bear only the aromatic chromophore give by \*\*\*laser\*\*\* or lamp irradiation both, (i) radical products [Ph<sub>3</sub>C.bul. and p-Ph-spiro-(OCH<sub>2</sub>CH<sub>2</sub>O)C-C<sub>6</sub>H<sub>4</sub>-C(.bul.)Ph<sub>2</sub>, resp.] after dissociation of the central C-Si bond ( $\Phi_{\text{H.rad}} = 0.16$ ), and (ii) persistent photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* products (of the type of 5-methylidene-6-trimethylsilyl-1,3-cyclohexadiene) absorbing at 300-450 nm and arising from a 1,3-shift of the SiMe<sub>3</sub> group from the benzylic to the ortho-position of the aromatic ring ( $\Phi_{\text{H.rad}} \approx 0.85$  for 2). Using fs-LFP on 2 we showed that the S<sub>1</sub> state recorded at 100 fs after the pulse decays on a time scale of 500 fs giving Ph<sub>3</sub>C.bul. through C-Si bond dissociation. In a second step and within the next 10 ps trityl radicals either escape from the solvent cage (the quantum yield of Ph<sub>3</sub>C.bul. formation  $\Phi_{\text{H.rad}} = 0.16$  was measured with ns-LFP), or undergo in-cage recombination to photo-Fries products. Thus, singlet excited states (S<sub>1</sub>) of the aromatic organosilanes (2, 3) prefer photo- \*\*\*Fries\*\*\*

\*\*\*rearrangement\*\*\* products, while triplet excited states (1, 4) favor free radicals. Both reactions proceed via a common primary photodissocn. step (C-Si bond homolysis) and differentiate obviously in the multiplicity of the resulting geminate radical pairs; singlet radical pairs give preferably photo-Fries products following an in-cage recombination, while triplet radical pairs escape the solvent cage (MeCN). The results demonstrate the crucial role which is played by the chromophore which prescribes in a sense, (i) the multiplicity of the intervening excited state and consequently that of the resulting geminate radical pair, and (ii) the dominant reaction path to be followed: the benzophenone- and anilino-chromophore present in silanes 1 and 4, resp., impose effective intersystem crossing transitions ( $k_{isc} = 10^{11} \text{ s}^{-1}$  and  $6 \cdot 10^8 \text{ s}^{-1}$ , resp.) leading to triplet states and finally to free radical products, while the Ph chromophore in 2 and 3, possessing ineffective isc ( $k_{isc} = 6 \cdot 10^6 \text{ s}^{-1}$ ) leads to photo-Fries product formation via the energetic high lying S1 state [apprx.  $443 \text{ kJ mol}^{-1}$  ( $106 \text{ kcal mol}^{-1}$ )].

ST substituent effect photo Fries vs photodissocn tritylsilane  
IT Crystal structure  
Molecular structure  
Phosphorescence  
UV and visible spectra  
(of starting silanes; triplet- vs. singlet-state imposed photochem. and the role of substituent effects on the photo-Fries and photodissocn. reaction of (triphenylmethyl)silanes)

IT ESR (electron spin resonance)  
Molar absorptivity  
(of trityl radical deriv.; triplet- vs. singlet-state imposed photochem. and the role of substituent effects on the photo-Fries and photodissocn. reaction of (triphenylmethyl)silanes)

IT Substituent effects  
(on photochem. pathway; triplet- vs. singlet-state imposed photochem. and the role of substituent effects on the photo-Fries and photodissocn. reaction of (triphenylmethyl)silanes)

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
(photochem.; triplet- vs. singlet-state imposed photochem. and the role of substituent effects on the photo-Fries and photodissocn. reaction of (triphenylmethyl)silanes)

IT Resonance  
(quinoid resonance of starting silanes; triplet- vs. singlet-state imposed photochem. and the role of substituent effects on the photo-Fries and photodissocn. reaction of (triphenylmethyl)silanes)

IT Quinonoid compounds  
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)  
(quinoid resonance of starting silanes; triplet- vs. singlet-state imposed photochem. and the role of substituent effects on the photo-Fries and photodissocn. reaction of (triphenylmethyl)silanes)

IT Optical absorption  
(transient; triplet- vs. singlet-state imposed photochem. and the role of substituent effects on the photo-Fries and photodissocn. reaction of (triphenylmethyl)silanes)

IT Excited singlet state  
Excited triplet state  
Photolysis  
(triplet- vs. singlet-state imposed photochem. and the role of substituent effects on the photo-Fries and photodissocn. reaction of (triphenylmethyl)silanes)

IT Silanes  
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)  
(triplet- vs. singlet-state imposed photochem. and the role of substituent effects on the photo-Fries and photodissocn. reaction of (triphenylmethyl)silanes)

IT 18752-86-8 76241-27-5  
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)  
(photolysis and crystallog.; triplet- vs. singlet-state imposed photochem. and the role of substituent effects on the photo-Fries and photodissocn. reaction of (triphenylmethyl)silanes)

IT 872598-13-5P  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)  
 (photolysis; triplet- vs. singlet-state imposed photochem. and the role of substituent effects on the photo-Fries and photodissocn. reaction of (triphenylmethyl)silanes)

IT 872598-15-7P  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)  
 (radiolysis; triplet- vs. singlet-state imposed photochem. and the role of substituent effects on the photo-Fries and photodissocn. reaction of (triphenylmethyl)silanes)

IT 100-42-5, Styrene, processes 102-54-5, Ferrocene 121-44-8, Triethylamine, processes  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)  
 (triplet state quencher; triplet- vs. singlet-state imposed photochem. and the role of substituent effects on the photo-Fries and photodissocn. reaction of (triphenylmethyl)silanes)

IT 2216-49-1, Trityl radical  
 RL: CPS (Chemical process); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); FORM (Formation, nonpreparative); PROC (Process); RACT (Reactant or reagent)  
 (triplet- vs. singlet-state imposed photochem. and the role of substituent effects on the photo-Fries and photodissocn. reaction of (triphenylmethyl)silanes)

IT 872598-20-4  
 RL: CPS (Chemical process); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); RCT (Reactant); FORM (Formation, nonpreparative); PROC (Process); RACT (Reactant or reagent)  
 (triplet- vs. singlet-state imposed photochem. and the role of substituent effects on the photo-Fries and photodissocn. reaction of (triphenylmethyl)silanes)

IT 872598-18-0 872598-22-6 872598-24-8  
 RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)  
 (triplet- vs. singlet-state imposed photochem. and the role of substituent effects on the photo-Fries and photodissocn. reaction of (triphenylmethyl)silanes)

IT 76241-30-0  
 RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)  
 (triplet- vs. singlet-state imposed photochem. and the role of substituent effects on the photo-Fries and photodissocn. reaction of (triphenylmethyl)silanes)

RE.CNT 119 THERE ARE 119 CITED REFERENCES AVAILABLE FOR THIS RECORD  
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L3 ANSWER 4 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2004:468736 CAPLUS  
DN 141:164389  
ED Entered STN: 10 Jun 2004  
TI Lasing in dye-doped cholesteric liquid crystals: Two new tuning strategies  
AU Chanishvili, Andro; Chilaya, Guram; Petriashvili, Gia; Barberi, Riccardo;  
Bartolino, Roberto; Cipparrone, Gabriella; Mazzulla, Alfredo; Oriol, Luis  
CS Institute of Cybernetics of Georgian Academy of Sciences, Tbilisi, 380086,  
Georgia  
SO Advanced Materials (Weinheim, Germany) (2004), 16(9-10), 791-795  
CODEN: ADVMEW; ISSN: 0935-9648  
PB Wiley-VCH Verlag GmbH & Co. KGaA  
DT Journal  
LA English  
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related  
Properties)  
AB Tuning of a dye-doped cholesteric liq. crystal (DDCLC) mirrorless  
\*\*\*laser\*\*\* in the violet-UV wavelength range was obtained using two  
different strategies for controlling the periodicity of the cholesteric  
helical structures. The first method is based on the phototransformation  
experienced by the optically active chiral agent, which induces a shift of  
the CLC selective reflection band. The novelty is the all-optical control  
of the lasing wavelength instead of the std. tuning based on varying the  
concn., temp., mech. stress, and elec. fields. The second method employs  
the std. technique used to modify the cholesteric helical pitch by means  
of the chiral dopant concn., but with an original architecture.  
ST dye doped cholesteric liq crystal lasing fine tuning  
IT Polyimides, uses  
RL: NUU (Other use, unclassified); USES (Uses)  
(alignment layer; fine tuning of lasing using helical structure of  
dye-doped cholesteric liq. crystal)  
IT Liquid crystals  
(cholesteric; fine tuning of lasing using helical structure of  
dye-doped cholesteric liq. crystal)  
IT Fluorescence  
\*\*\*Lasers\*\*\*  
(fine tuning of lasing using helical structure of dye-doped cholesteric



liq. crystal)  
 IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 (photochem.; fine tuning of lasing using helical structure of dye-doped  
 cholesteric liq. crystal)  
 IT UV and visible spectra  
 (transmission; fine tuning of lasing using helical structure of  
 dye-doped cholesteric liq. crystal)  
 IT 128944-09-2, ZLI-811  
 RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical  
 process); PRP (Properties); PYP (Physical process); PROC (Process); USES  
 (Uses)  
 (chiral dopant; fine tuning of lasing using helical structure of  
 dye-doped cholesteric liq. crystal)  
 IT 82197-96-4, ZLI-1695  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP  
 (Physical process); PROC (Process)  
 (host; fine tuning of lasing using helical structure of dye-doped  
 cholesteric liq. crystal)  
 IT 26140-60-3D, Terphenyl, derivs.  
 RL: PRP (Properties)  
 (luminescent dye; fine tuning of lasing using helical structure of  
 dye-doped cholesteric liq. crystal)

RE.CNT 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD  
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L3 ANSWER 5 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2004:447245 CAPLUS  
 DN 141:14551  
 ED Entered STN: 03 Jun 2004  
 TI Nano- \*\*\*pattern\*\*\* formation of resin with sulfonamide structure by  
 quantum beam  
 IN Maekawa, Yasunari; Yoshida, Masaru  
 PA Japan Atomic Energy Research Institute, Japan  
 SO Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G03F007-004  
 ICS G03F007-38; H01L021-027  
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 Section cross-reference(s): 38  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004157235	A2	20040603	JP 2002-321112	20021105
PRAI	JP 2002-321112		20021105		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004157235	ICM	G03F007-004
	ICS	G03F007-38; H01L021-027
	IPCI	G03F0007-004 [ICM,7]; G03F0007-38 [ICS,7]; H01L0021-027 [ICS,7]
	FTERM	2H025/AA02; 2H025/AB16; 2H025/AC06; 2H025/AC07; 2H025/AD07; 2H025/BH04; 2H025/FA03; 2H025/FA12; 2H025/FA15; 2H096/AA25; 2H096/BA20; 2H096/DA01; 2H096/DA04; 2H096/EA06; 2H096/EA08; 2H096/GA08; 2H096/JA03; 5F046/AA28; 5F046/BA07

AB The resin with sulfonamide structure is coated on a substrate, dried,  
 heat-cured, and irradiated with nano-scale quantum beam for forming  
 \*\*\*pattern\*\*\* by chem. change of the resin. An element film is formed  
 by growing a metal or chem. bonding a dye at the chem.-changed resin area.  
 Nano-scale alk. \*\*\*pattern\*\*\* can be formed on the resin and it is  
 useful for nano-scale semiconductor element or optical recording material.

ST nano \*\*\*pattern\*\*\* quantum beam sulfonamide polymer \*\*\*Fries\*\*\*  
 \*\*\*rearrangement\*\*\*

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 Optical recording materials  
 Semiconductor device fabrication  
 (nano- \*\*\*pattern\*\*\* formation by \*\*\*Fries\*\*\*  
 \*\*\*rearrangement\*\*\* of resin with sulfonamide structure using the  
 quantum beam)

IT Polysulfonamides  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
 use); PREP (Preparation); USES (Uses)  
 (nano- \*\*\*pattern\*\*\* formation by \*\*\*Fries\*\*\*  
 \*\*\*rearrangement\*\*\* of resin with sulfonamide structure using the  
 quantum beam)

IT 31623-88-8P, 1,3-Benzenedisulfonyl chloride-bis(4-aminophenyl)ether  
 copolymer 32169-89-4P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
 use); PREP (Preparation); USES (Uses)  
 (nano- \*\*\*pattern\*\*\* formation by \*\*\*Fries\*\*\*  
 \*\*\*rearrangement\*\*\* of resin with sulfonamide structure using the  
 quantum beam)

IT 1709-44-0D, 3-Aminobenzaldehyde, N- substituted deriv 7758-98-7, Copper  
 sulfate, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (nano- \*\*\*pattern\*\*\* formation by \*\*\*Fries\*\*\*  
 \*\*\*rearrangement\*\*\* of resin with sulfonamide structure using the  
 quantum beam)

L3 ANSWER 6 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2004:392807 CAPLUS  
 DN 141:331867  
 ED Entered STN: 14 May 2004

TI \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of aryl formates promoted by BCl<sub>3</sub>.  
 Mechanistic evidence from 11B NMR spectra and DFT calculations  
 AU Bagno, Alessandro; Kantlehner, Willi; Kress, Ralf; Saielli, Giacomo  
 CS Department of Chemistry, University of Padova, Padua, I-35131, Italy  
 SO Zeitschrift fuer Naturforschung, B: Chemical Sciences (2004), 59(4),  
 386-397  
 CODEN: ZNBSEN; ISSN: 0932-0776  
 PB Verlag der Zeitschrift fuer Naturforschung  
 DT Journal  
 LA English  
 CC 25-15 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)  
 Section cross-reference(s): 22  
 AB The \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of model aryl formate esters,  
 promoted by boron trichloride, has been investigated by means of NMR  
 spectroscopy (both exptl. and computational) and by DFT calcns. Firstly,  
 the 11B NMR chem. shifts of a series of model boron compds. have been  
 predicted by GIAO-B3LYP/6-31G(d,p) calcns., in order to make predictions  
 of the chem. shifts of transient reaction intermediates observable by 11B  
 NMR. Such 11B spectra for the reaction of two esters (Ph and  
 3-methoxyphenyl formates) have been obtained, and are found to follow  
 different \*\*\*patterns\*\*\* which can be rationalized on the basis of  
 computed chem. shifts. Secondly, DFT calcns. [B3LYP/6-31G(d,p) level]  
 have been employed to investigate several mechanistic pathways of the  
 rearrangement of Ph formate. It is found that the pathways leading to the  
 lowest activation energies are those in which formyl chloride is generated  
 from a complex between Ph formate and BCl<sub>3</sub>, which then acts as the  
 formylating agent.  
 ST \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* aryl formate boron trichloride  
 boron NMR DFT  
 IT NMR (nuclear magnetic resonance)  
 (boron-11; mechanistic study of \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 of aryl formates promoted by BCl<sub>3</sub> using boron-11 NMR and DFT calcns.)  
 IT Density functional theory  
 \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 (mechanistic study of \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of aryl  
 formates promoted by BCl<sub>3</sub> using boron-11 NMR and DFT calcns.)  
 IT 1864-94-4, Phenyl formate 30114-41-1, 3-Methoxyphenyl formate  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical  
 process); PRP (Properties); PROC (Process)  
 (mechanistic study of \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of aryl  
 formates promoted by BCl<sub>3</sub> using boron-11 NMR and DFT calcns.)  
 IT 10294-34-5, Boron trichloride  
 RL: RGT (Reagent); RACT (Reactant or reagent)  
 (mechanistic study of \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of aryl  
 formates promoted by BCl<sub>3</sub> using boron-11 NMR and DFT calcns.)  
 RE.CNT 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD  
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L3 ANSWER 7 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:358254 CAPLUS

DN 141:139886

ED Entered STN: 03 May 2004

TI Exploring the multidimensional character of ultrafast molecular dynamics

AU Lochbrunner, S.; Riedle, E.

CS Lehrstuhl fuer BioMolekulare Optik, Sektion Physik, Ludwig-Maximilians-Universitaet, Munich, 80538, Germany

SO Recent Research Developments in Chemical Physics (2003), 4(Pt. 1), 31-61  
CODEN: RRDCDQ

PB Transworld Research Network

DT Journal; General Review

LA English

CC 22-0 (Physical Organic Chemistry)

Section cross-reference(s): 74

AB A review. The interplay of many degrees of freedom is characteristic for mol. processes and one dimensional models are inadequate. With a UV-visible pump-probe spectrometer based on noncollinearly phase matched optical parametric amplifiers (NOPAs) providing an unprecedented time resoln. of 30 fs the authors study the dynamics of mol. processes with prototype character on the time scale of nuclear motions. The spectrally well sepd. UV excitation and visible probe pulses allow for the first time to observe coherent wavepacket dynamics unequivocally assocd. with a reactive process in a multidimensional system. The authors identify the role of the various nuclear and electronic degrees of freedom in real time and gain direct insight into the mechanisms of photoreactions and electronic relaxation processes. In a no. of mols. showing ultrafast excited state intramol. proton transfer (ESIPT) the authors observe characteristic oscillatory signal contributions due to coherent wavepacket motion. They reveal that up to four skeletal normal modes contribute significantly to the reaction path whereas the proton itself plays a rather passive role. The authors are able to reconstruct the geometry changes from the amplitudes and phases of coherently excited vibrations obsd. in the product state. By applying this procedure to the ESIPT the authors resolve the reaction. These results lead to a new multidimensional ESIPT model and explain the appearance of irreversibility without loss of coherence. Previously the existence of vibrational wavepackets was demonstrated in several systems. However, this is the first time that the observation and anal. of its evolution reveals the reaction mechanism. In addn. wavepacket dynamics assocd. with different reaction channels can be distinguished by their dependence on the excess energy. In the case of intramol. double proton transfer it enables us to identify and discern the mechanisms relevant for the stepwise and the concerted double proton transfer. For internal conversion (IC) processes and photo- \*\*\*Fries\*\*\* \*\*\*rearrangements\*\*\* the authors find a common electronic relaxation mechanism which arises from the coupling between three electronic states. The process proceeds from the originally excited .pi..pi.\* state via a barrier due to an avoided crossing onto a dark .pi..sigma.\* state. For the IC a subsequent conical intersection leads to a very efficient return to the electronic ground state. The first real time observation of a photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* and the assocd. radical generation and recombination shows that in this case a part of the population proceeds on the dissociative .pi..sigma.\* state resulting in a cleavage of the O-C-bond. In both cases the vibrational normal modes relevant for the electronic coupling are orthogonal to those primarily excited by the applied UV \*\*\*laser\*\*\* pulse.

ST review multidimensional character ultrafast dynamics

IT Internal conversion

Molecular dynamics

Nanomachines

Normal modes

Relaxation  
Wave packets  
(exploring multidimensional character of ultrafast mol. dynamics)

IT Optical parametric amplifiers  
(in UV-visible pump-probe spectrometer; exploring multidimensional character of ultrafast mol. dynamics)

IT Proton transfer  
(intramol., excited state; exploring multidimensional character of ultrafast mol. dynamics)

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
(photochem.; exploring multidimensional character of ultrafast mol. dynamics)

IT Optical pumping  
(pump-probe expts.; exploring multidimensional character of ultrafast mol. dynamics)

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L3 ANSWER 8 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2004:257949 CAPLUS  
 DN 141:89260  
 ED Entered STN: 29 Mar 2004  
 TI Photochemistry of 2-acyloxycarbazoles. A potential tool in the synthesis  
 of carbazole alkaloids  
 AU Bonesi, Sergio M.; Crevatin, Laura K.; Erra-Balsells, Rosa  
 CS Departamento de Quimica Organica, Facultad de Ciencias Exactas y  
 Naturales, Universidad de Buenos Aires, CIHIDECAR-CONICET, Buenos Aires,  
 1428, Argent.  
 SO Photochemical & Photobiological Sciences (2004), 3(4), 381-388  
 CODEN: PPSHCB; ISSN: 1474-905X  
 PB Royal Society of Chemistry  
 DT Journal  
 LA English  
 CC 31-3 (Alkaloids)  
 Section cross-reference(s): 22  
 OS CASREACT 141:89260  
 GI

/ Structure 1 in file .gra /

AB The photochem. of two 2-acyloxycarbazoles, 2-acetyl- and  
 2-benzoyloxycarbazole I (R = Me, Ph, resp.), in different solvents was  
 studied. Irradn. of the 2-acyloxycarbazoles in org. media at 254 or 313  
 nm yielded the [1,3]-migrated photoproducts, 1-acyl-2-hydroxycarbazole,  
 3-acyl-2-hydroxycarbazole and 2-hydroxycarbazole. The effects of the  
 solvent, the atm. and the intensity of the light source on the photochem.  
 of 2-acyloxycarbazole were studied. \*\*\*Laser\*\*\* flash photolysis as  
 well as photosensitization expts. were performed in order to det. the  
 photoreactive excited state. Electronic spectra (absorption, fluorescence  
 and phosphorescence emission spectra) of the 2-acyloxycarbazoles were  
 recorded in homogeneous media at 298 K and in solid matrixes at 77 K. The  
 dynamic properties of the lowest singlet excited state in terms of  
 fluorescence lifetime and fluorescence quantum yield were measured in  
 different org. solvents at room temp. The photo- \*\*\*Fries\*\*\*  
 \*\*\*rearrangement\*\*\* as a mild and clean one-pot reaction for the prepn.

of an advanced intermediate precursor in the total synthesis of carbazole alkaloids was described.

ST acyloxy carbazole photochem \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
carbazole alkaloid synthesis

IT \*\*\*Rearrangement\*\*\* kinetics  
( \*\*\*Fries\*\*\* ; photochem. of 2-acyloxycarbazoles as a potential tool in the synthesis of carbazole alkaloids)

IT Alkaloids, preparation  
RL: PNU (Preparation, unclassified); PREP (Preparation)  
(carbazole; photochem. of 2-acyloxycarbazoles as a potential tool in the synthesis of carbazole alkaloids)

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
(photochem.; photochem. of 2-acyloxycarbazoles as a potential tool in the synthesis of carbazole alkaloids)

IT 98-88-4, Benzoyl chloride 92163-33-2, 2-(Acetyloxy)-9H-carbazole  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(photochem. of 2-acyloxycarbazoles as a potential tool in the synthesis of carbazole alkaloids)

IT 86-79-3P, 2-Hydroxy-9H-carbazole 714961-71-4P, 2-(Benzoyloxy)-9H-carbazole  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(photochem. of 2-acyloxycarbazoles as a potential tool in the synthesis of carbazole alkaloids)

IT 26093-21-0P 26187-11-1P 709025-67-2P 714961-72-5P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(photochem. of 2-acyloxycarbazoles as a potential tool in the synthesis of carbazole alkaloids)

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L3 ANSWER 9 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:416465 CAPLUS

DN 139:381402

ED Entered STN: 01 Jun 2003

TI Intramolecular weak hydrogen bonds in substituted 4-arylthiazoles

AU Sanchez-Viesca, F.; Berros, Martha; Gomez, Ma. R.

CS Fac. of Chem., Grad. Div., National Autonomous Univ. of Mexico, Mexico City, 04510, Mex.

SO Heterocyclic Communications (2003), 9(2), 165-170

CODEN: HCOMEX; ISSN: 0793-0283

PB Freund Publishing House Ltd.

DT Journal

LA English

CC 28-7 (Heterocyclic Compounds (More Than One Hetero Atom))

Section cross-reference(s): 22

OS CASREACT 139:381402

AB We have synthesized new polysubstituted 4-arylthiazoles with a substitution \*\*\*pattern\*\*\* able to form intramol. weak hydrogen bonds as secondary structure, and besides, displaying in the arom. region of their 1H-NMR spectra an ABX spin system and only one singlet (the thiazolic proton), thus permitting us to make doubtless assignments. These results confirmed previous assignments made by us in other thiazole-derivs. prepd. by the first time. The spectroscopic data (IR, 1H-NMR and MS) of these thiazoles, as well as of the required intermediates, are discussed.

ST substituted arylthiazole prepn intramol weak hydrogen bonding

IT Cycloaddition reaction

\*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*

(in prepn. of substituted arylthiazoles having intramol. weak hydrogen bonds)

IT Hydrogen bond

(intramol.; prepn. and spectroscopic studies of substituted arylthiazoles having intramol. weak hydrogen bonds)

IT 490-78-8, Quinacetophenone 1205-91-0 7402-28-0

RL: RCT (Reactant); RACT (Reactant or reagent)

(Fries transposition of; prepn. and spectroscopic studies of substituted arylthiazoles having intramol. weak hydrogen bonds)

IT 62-55-5, Thioacetamide 62-56-6, Thiourea, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(cycloaddn. of; prepn. and spectroscopic studies of substituted arylthiazoles having intramol. weak hydrogen bonds)

IT 21222-04-8P 25015-91-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(cycloaddn. with thioacetamide; prepn. and spectroscopic studies of substituted arylthiazoles having intramol. weak hydrogen bonds)

IT 1204-21-3P, .alpha.-Bromo-2,5-dimethoxyacetophenone

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(cycloaddn. with thiourea or thioacetamide; prepn. and spectroscopic studies of substituted arylthiazoles having intramol. weak hydrogen bonds)

IT 938-46-5P 1201-38-3P 74605-12-2P 459124-90-4P 459124-91-5P

459124-92-6P 459124-93-7P 459124-94-8P

RL: SPN (Synthetic preparation); PREP (Preparation)

(prepn. and spectroscopic studies of substituted arylthiazoles having intramol. weak hydrogen bonds)

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L3 ANSWER 10 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2003:157689 CAPLUS  
DN 139:28525  
ED Entered STN: 03 Mar 2003  
TI Phototransformation of carbaryl in aqueous solution \*\*\*Laser\*\*\* -flash  
photolysis and steady-state studies  
AU Brahmia, Ouarda; Richard, Claire  
CS Laboratoire de Photochimie Moleculaire et Macromoleculaire, UMR CNRS,  
Universite Blaise Pascal, Aubiere, 63177, Fr.  
SO Journal of Photochemistry and Photobiology, A: Chemistry (2003), 156(1-3),  
9-14  
CODEN: JPPCEJ; ISSN: 1010-6030  
PB Elsevier Science B.V.  
DT Journal  
LA English  
CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
AB Aq. carbaryl is shown to be photolysed with a low quantum yield  
((2.1+-0.2).times.10-3 in air-satd. medium) into 1,2-naphthoquinone,  
1,4-naphthoquinone, 2-hydroxy-1,4-naphthoquinone and 7-hydroxy-1,4-  
naphthoquinone. In acetonitrile and methanol, carbaryl is mostly  
photoconverted into 1-naphthol. This behavior contrasts with those of  
carbamates and aryl esters that generally undergo efficient photo-  
\*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*. Several transient species were  
detected by \*\*\*laser\*\*\* -flash photolysis in water: the triplet-triplet  
(T-T) absorption (.lambda.max=410 nm, kd=3.5.times.105 s-1), the solvated  
electrons (.phi.=0.022+-0.002), the naphthoxyl radicals and a long-lived  
unassigned species. The mechanism of phototransformation is discussed.  
ST carbaryl photolysis phototransformation aq soln; naphthoxyl radical  
naphthoquinone hydroxynaphthoquinone carbaryl photolysis  
IT Photolysis  
Solvated electrons  
Triplet state transition  
( \*\*\*laser\*\*\* -flash photolysis and steady-state studies of  
phototransformation of carbaryl in aq. soln.)  
IT Optical absorption  
(transient; \*\*\*laser\*\*\* -flash photolysis and steady-state studies  
of phototransformation of carbaryl in aq. soln.)  
IT 63-25-2, Carbaryl  
RL: CPS (Chemical process); PEP (Physical, engineering or chemical  
process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant  
or reagent)  
( \*\*\*laser\*\*\* -flash photolysis and steady-state studies of  
phototransformation of carbaryl in aq. soln.)  
IT 83-72-7, 2-Hydroxy-1,4-naphthoquinone 90-15-3, 1-Naphthol 130-15-4,  
1,4-Naphthoquinone 524-42-5, 1,2-Naphthoquinone 4923-53-9,  
6-Hydroxy-1,4-naphthoquinone  
RL: CPS (Chemical process); FMU (Formation, unclassified); PEP (Physical,  
engineering or chemical process); PRP (Properties); FORM (Formation,  
nonpreparative); PROC (Process)  
(photolysis product; \*\*\*laser\*\*\* -flash photolysis and steady-state  
studies of phototransformation of carbaryl in aq. soln.)  
IT 33490-96-9, 1-Naphthalenyloxy  
RL: CPS (Chemical process); FMU (Formation, unclassified); PEP (Physical,  
engineering or chemical process); PRP (Properties); RCT (Reactant); FORM  
(Formation, nonpreparative); PROC (Process); RACT (Reactant or reagent)  
(photolysis product; \*\*\*laser\*\*\* -flash photolysis and steady-state  
studies of phototransformation of carbaryl in aq. soln.)  
RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE  
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L3 ANSWER 11 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:674154 CAPLUS

DN 137:390989

ED Entered STN: 06 Sep 2002

TI A water-developable negative photoresist based on the photocrosslinking of N-phenylamide groups with reduced environmental impact

AU Chae, Kyu Ho; Sun, Gum Ju; Kang, Jin Koo; Kim, Taek Hyeon

CS Department of Applied Chemistry and The Polymer Science & Technology Research Center, Chonnam National University, Kwangju, 500-757, S. Korea

SO Journal of Applied Polymer Science (2002), 86(5), 1172-1180

CODEN: JAPNAB; ISSN: 0021-8995

PB John Wiley & Sons, Inc.

DT Journal

LA English

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

AB A water-developable neg. photoresist based on the photocrosslinking of N-phenylamide groups was prep'd. by the copolymn. of 4-styrenesulfonic acid sodium salts (SSS) with N-phenylmethacrylamide (co-polymer A) or p-hydroxy-N-phenylmethacrylamide (copolymer B), and its properties such as soly. changes, photochem. reaction, and photoresist characteristics were studied. The copolymer contg. a relatively higher amt. of SSS units was sol. in water. Soly. changes of the copolymers in the various buffer solns. of pH 4 .apprx. 11 and in water upon irradi. were obsd. by the measurement of insol. fraction. The copolymers were sol. in water before irradi., whereas they became insol. upon irradi. with the UV light of 254 nm. The photochem. reaction of the copolymer studied by the UV- and IR absorption spectroscopies indicated that a photo- \*\*\*Fries\*\*\*

\*\*\*rearrangement\*\*\* was favored for copolymer A, whereas a photocrosslinking reaction was predominate for copolymer B. Resist properties of the copolymers were studied by measurement of the normalized thickness and by development of the micropattern. Neg. tone

\*\*\*images\*\*\* with a resoln. of 1 .mu.m were obtained with these materials that have a sensitivity (Dg0.5) of .apprx. 1100 mJ/cm2 with an aq. developing process.

ST photolysis water developable neg photoresist photocrosslinking phenylamide group; styrenesulfonic acid sodium salt phenylmethacrylamide copolymer photoresist photocrosslinking; photochem \*\*\*Fries\*\*\*

\*\*\*rearrangement\*\*\* styrenesulfonic acid sodium salt phenylmethacrylamide copolymer

IT Crosslinking

\*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*

(photochem.; photoreactions and soly. changes of water-developable neg. photoresists based on copolymers of sodium styrenesulfonate with phenylmethacrylamide and its hydroxy-deriv.)

IT Photolysis

Solubility

(photoreactions and soly. changes of water-developable neg. photoresists based on copolymers of sodium styrenesulfonate with phenylmethacrylamide and its hydroxy-deriv.)

IT Thickness

(water-developable neg. photoresists based on copolymers of sodium styrenesulfonate with phenylmethacrylamide and its hydroxy-deriv.)

IT Negative photoresists

(water-developable; photoreactions and soly. changes of water-developable neg. photoresists based on copolymers of sodium styrenesulfonate with phenylmethacrylamide and its hydroxy-deriv.)

IT 1611-83-2P, N-Phenylmethacrylamide 19243-95-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (copolymn. with sodium styrenesulfonate)

IT 194878-93-8P, N-Phenylmethacrylamide-sodium p-styrenesulfonate copolymer  
 194878-94-9P, N-(4-Hydroxyphenyl)methacrylamide-sodium p-styrenesulfonate  
 copolymer  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical  
 process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation);  
 TEM (Technical or engineered material use); PREP (Preparation); PROC  
 (Process); RACT (Reactant or reagent); USES (Uses)  
 (photoreactions and soly. changes of water-developable neg.  
 photoresists based on copolymers of sodium styrenesulfonate with  
 phenylmethacrylamide and its hydroxy-deriv.)

RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD  
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L3 ANSWER 12 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:237790 CAPLUS

DN 136:407196

ED Entered STN: 28 Mar 2002

TI Convection-induced absorption oscillations in a cuvette after irradiation  
 of a pentazadiene solution by \*\*\*laser\*\*\* pulses

AU Gassmann, Fritz; Lippert, Thomas; Wei, Jiang; Wokaun, Alexander

CS Paul Scherrer Institute, Villigen, CH-5232, Switz.

SO Journal of Physical Chemistry A (2002), 106(16), 4061-4067  
 CODEN: JPCAFH; ISSN: 1089-5639

PB American Chemical Society

DT Journal

LA English

CC 65-8 (General Physical Chemistry)

Section cross-reference(s): 22, 35, 66, 74

AB After irradiation of a pentazadiene soln. (in THF) in a cuvette by  
 \*\*\*laser\*\*\* pulses, damped oscillations of the absorbance were obsd. and  
 mistakenly interpreted as being of photochem. origin. Addnl. expts. gave  
 results that were incompatible with the authors photochem. interpretation  
 and led to the identification of convection as the phys. mechanism behind  
 the obsd. oscillations. A simulation model based on the Navier-Stokes  
 equations reproduces the damped oscillations. Anal. formulas are given to  
 est. convection velocities in cuvettes and might help to prevent

misinterpretation of photolysis expts. They show that arbitrarily small horizontal temp. gradients lead to convection in even very thin cuvettes. In any std. temp.-controlled cuvette, the fluid has to be assumed to be in motion rather than at rest.

ST convection induced absorption oscillation pentazadiene soln \*\*\*laser\*\*\* pulse irradiation; polyester soln convection induced absorption oscillation \*\*\*laser\*\*\* pulse irradiation; hexachloroplatinic acid soln convection induced absorption oscillation irradiation

IT Convective flow  
Optical absorption  
Simulation and Modeling  
(convection-induced damped oscillations of absorbance in cuvette after \*\*\*laser\*\*\* pulse irradiation of photochem. active and inactive compds. in solns.)

IT Polyesters, properties  
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)  
(convection-induced damped oscillations of absorbance in cuvette after \*\*\*laser\*\*\* pulse irradiation of photochem. active and inactive compds. in solns.)

IT Temperature  
(gradient; convection-induced damped oscillations of absorbance in cuvette after \*\*\*laser\*\*\* pulse irradiation of photochem. active and inactive compds. in solns.)

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
(photochem.; convection-induced damped oscillations of absorbance in cuvette after \*\*\*laser\*\*\* pulse irradiation of photochem. active and inactive compds. in solns.)

IT \*\*\*Laser\*\*\* radiation  
(pulsed; convection-induced damped oscillations of absorbance in cuvette after \*\*\*laser\*\*\* pulse irradiation of photochem. active and inactive compds. in solns.)

IT 109-99-9, THF, properties 16941-12-1, Hexachloroplatinic acid 26659-32-5, Bisphenol a-terephthalic acid copolymer, sru 26659-86-9, Bisphenol a-terephthalic acid copolymer 185738-63-0 278175-02-3  
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)  
(convection-induced damped oscillations of absorbance in cuvette after \*\*\*laser\*\*\* pulse irradiation of photochem. active and inactive compds. in solns.)

RE.CNT 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD  
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L3 ANSWER 13 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2000:126175 CAPLUS  
 DN 132:198762  
 ED Entered STN: 24 Feb 2000  
 TI Degradation of propoxur in water using 2,4,6-triphenylpyrylium-Zeolite Y  
 as photocatalyst. Product study and \*\*\*laser\*\*\* flash photolysis  
 AU Sanjuan, A.; Aguirre, G.; Alvaro, M.; Garcia, H.; Scaiano, J. C.  
 CS Departamento de Quimica e Instituto de Tecnologia Quimica UPV-CSIC,  
 Universidad Politecnica de Valencia, Valencia, 46071, Spain  
 SO Applied Catalysis, B: Environmental (2000), 25(4), 257-265  
 CODEN: ACBEE3; ISSN: 0926-3373  
 PB Elsevier Science B.V.  
 DT Journal  
 LA English  
 CC 61-5 (Water)  
 Section cross-reference(s): 5, 67  
 AB Direct UV photolysis of aerated aq. solns. of propoxur leads to an almost  
 complete disappearance of the starting material and formation of photo-  
 \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* products. The degree of  
 mineralization estd. by the difference between initial and combined final  
 moles is, however, small. \*\*\*Laser\*\*\* flash photolysis techniques  
 established the key intermediate in the direct aq. photolysis is  
 2-isopropoxyphenoxyl radical. Photocatalyzed mineralization using  
 2,4,6-triphenylpyrylium ion encapsulated in zeolite Y super-cages under  
 irradsn. conditions in which propoxur is not directly altered, produced a  
 degree of mineralization comparable to that achieved using TiO2.  
 Formation of minor amts. of 2-isopropoxyphenol, 1,2-dihydroxybenzene, and  
 isopropoxy-dihydroxybenzene was obsd. in photocatalyzed degrdns.  
 \*\*\*Laser\*\*\* flash photolysis established the mechanism involving an  
 initial electron transfer between excited TP+ and propoxur is possible.  
 ST propoxur degrdn water \*\*\*laser\*\*\* flash photolysis; water purifn  
 \*\*\*laser\*\*\* flash photolysis; zeolite Y encapsulated triphenylpyrylium  
 photocatalyst; reaction product \*\*\*laser\*\*\* flash photolysis propoxur  
 IT Water purification  
 (photolytic, \*\*\*laser\*\*\* flash; propoxur degrdn. in water by  
 \*\*\*laser\*\*\* flash photolysis over 2,4,6-triphenylpyrylium-zeolite Y  
 as photocatalyst)  
 IT Photolysis catalysts  
 (propoxur degrdn. in water by \*\*\*laser\*\*\* flash photolysis over  
 2,4,6-triphenylpyrylium-zeolite Y as photocatalyst)  
 IT Y zeolites  
 RL: CAT (Catalyst use); USES (Uses)  
 (triphenylpyrylium bound within; propoxur degrdn. in water by  
 \*\*\*laser\*\*\* flash photolysis over 2,4,6-triphenylpyrylium-zeolite Y  
 as photocatalyst)  
 IT 13463-67-7, Titania, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (propoxur degrdn. in water by \*\*\*laser\*\*\* flash photolysis over  
 2,4,6-triphenylpyrylium-zeolite Y as photocatalyst)  
 IT 120-80-9, o-Dihydroxybenzene, processes 124-38-9, Carbon dioxide,  
 processes 4812-20-8, o-Isopropoxyphenol 170512-65-9 192126-05-9  
 259748-72-6 259748-73-7  
 RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical  
 process); FORM (Formation, nonpreparative); PROC (Process)  
 (propoxur degrdn. in water by \*\*\*laser\*\*\* flash photolysis over  
 2,4,6-triphenylpyrylium-zeolite Y as photocatalyst)  
 IT 114-26-1, Propoxur  
 RL: PEP (Physical, engineering or chemical process); POL (Pollutant); REM  
 (Removal or disposal); OCCU (Occurrence); PROC (Process)  
 (propoxur degrdn. in water by \*\*\*laser\*\*\* flash photolysis over  
 2,4,6-triphenylpyrylium-zeolite Y as photocatalyst)  
 IT 15959-35-0, 2,4,6-Triphenylpyrylium  
 RL: CAT (Catalyst use); USES (Uses)

(zeolite Y-bound; propoxur degradn. in water by \*\*\*laser\*\*\* flash  
photolysis over 2,4,6-triphenylpyrylium-zeolite Y as photocatalyst)

RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L3 ANSWER 14 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1999:162707 CAPLUS

DN 130:330467

ED Entered STN: 12 Mar 1999

TI Photochemistry of Bifunctional Chain Molecules Containing Benzophenone and  
Anilino Chromophores. Magnetic Field and Magnetic Isotope Effects on  
Lifetimes of Triplet Biradicals

AU Nakagaki, Ryoichi; Yamaoka, Masaharu; Mutai, Kiyoshi

CS Fac. Pharm. Sci., Kanazawa University, Takara-machi, Kanazawa, Ishikawa,  
920-0934, Japan

SO Bulletin of the Chemical Society of Japan (1999), 72(3), 347-355

CODEN: BCSJA8; ISSN: 0009-2673

PB Chemical Society of Japan

DT Journal

LA English

CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

AB The decay time of biradicals contg. a benzophenone ketyl and an  
anilinoalkyl radical has been examd. by nano-second \*\*\*laser\*\*\*  
photolysis in the presence of external magnetic fields up to 1 T. When  
sites with high spin densities are labeled with heavy carbon, noticeable  
magnetic isotope effects are obsd. on the decay kinetics for biradicals.  
Small kinetic effects are obsd. for deuterated species. The obtained  
results can be interpreted in terms of spin-lattice relaxation due to  
anisotropic hyperfine and dipole-dipole interactions. Procedures for  
prepg. labeled species are also described.

ST benzophenone ketyl anilinoalkyl biradical triplet transient lifetime  
photolysis; magnetic field isotope effect biradical triplet transient  
photolysis

IT Hyperfine splitting

Isotope effect

Photolysis

Photolysis kinetics

Spin-lattice relaxation

Triplet state transition

(magnetic field and magnetic isotope effects on lifetimes of triplet  
biradical transients in photolysis of mols. contg. benzophenone ketyl

and anilinoalkyl chromophores)

IT Biradicals  
 RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); FORM (Formation, nonpreparative); PROC (Process)  
 (magnetic field and magnetic isotope effects on lifetimes of triplet biradical transients in photolysis of mols. contg. benzophenone ketyl and anilinoalkyl chromophores)

IT Magnetic field  
 (magnetic; magnetic field and magnetic isotope effects on lifetimes of triplet biradical transients in photolysis of mols. contg. benzophenone ketyl and anilinoalkyl chromophores)

IT Electron spin density  
 (of triplet biradical transients produced in photolysis of mols. contg. benzophenone ketyl and anilinoalkyl chromophores)

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 (photochem.; of phenyl-d5 benzoate-d in synthesis of mols. contg. benzophenone ketyl and anilinoalkyl chromophores)

IT Optical absorption  
 (transient; magnetic field and magnetic isotope effects on lifetimes of triplet biradical transients in photolysis of mols. contg. benzophenone ketyl and anilinoalkyl chromophores)

IT 53655-20-2P 223716-82-3P 223716-83-4P 223716-87-8P,  
 p-(12-Bromododecyloxy)benzophenone-d9 223716-88-9P 223716-89-0P  
 223716-91-4P 223716-92-5P, p-(11-Bromoundecyloxy)benzophenone  
 223716-93-6P 223716-95-8P 223716-96-9P 223716-98-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (in synthesis of mols. contg. benzophenone ketyl and anilinoalkyl chromophores)

IT 7782-39-0, Deuterium, properties  
 RL: PRP (Properties)  
 (isotope effect; magnetic field and magnetic isotope effects on lifetimes of triplet biradical transients in photolysis of mols. contg. benzophenone ketyl and anilinoalkyl chromophores)

IT 223716-99-2P 223717-00-8P 223717-01-9P 223717-02-0P 223717-04-2P  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)  
 (magnetic field and magnetic isotope effects on lifetimes of triplet biradical transients in photolysis of mols. contg. benzophenone ketyl and anilinoalkyl chromophores)

IT 223716-84-5P, Phenyl-d5 benzoate-d5  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* in synthesis of mols. contg. benzophenone ketyl and anilinoalkyl chromophores)

IT 223716-86-7P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. by photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* from phenyl-d5 benzoate-d and reaction in synthesis of mols. contg. benzophenone ketyl and anilinoalkyl chromophores)

IT 223716-79-8P, p-(12-Bromododecyloxy)benzophenone  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (reaction with aniline in synthesis of mols. contg. benzophenone ketyl and anilinoalkyl chromophores)

IT 1137-42-4, p-Hydroxybenzophenone  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with dibromododecane in synthesis of mols. contg. benzophenone ketyl and anilinoalkyl chromophores)

IT 25088-33-9 145191-24-8  
 RL: PRP (Properties)  
 (spin d. of model radicals in relation to triplet l transients produced in photolysis of mols. contg. benzophenone ketyl and anilinoalkyl chromophores)

IT 223717-06-4 223717-07-5 223717-08-6 223717-09-7 223717-10-0  
 RL: PRP (Properties)  
 (spin d. of triplet biradicals of mols. contg. benzophenone ketyl and anilinoalkyl chromophores)

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L3 ANSWER 15 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1998:633414 CAPLUS

DN 130:24751

ED Entered STN: 08 Oct 1998

TI Tunneling effects on the 1,3-sigmatropic hydrogen shift in the photo-  
 \*\*\*Fries\*\*\* \*\*\*rearranged\*\*\* intermediate of 2,4-dimethoxy-6-(p-tolyloxy)-s-triazine

AU Kimura, Yukihiro; Kakiuchi, Naoya; Tobita, Seiji; Shizuka, Haruo

CS Department of Chemistry, Gunma University, Kiryu, Gunma, 376-8515, Japan

SO Journal of the Chemical Society, Faraday Transactions (1998), 94(20),  
 3077-3085

CODEN: JCFTEV; ISSN: 0956-5000

PB Royal Society of Chemistry

DT Journal

LA English

CC 22-12 (Physical Organic Chemistry)

AB Kinetic studies on the 1,3-sigmatropic H shift in the photo- \*\*\*Fries\*\*\*  
 \*\*\*rearranged\*\*\* intermediate of 2,4-dimethoxy-6-(p-tolyloxy)-s-triazine  
 (PTTH) were carried out in various solvents by using \*\*\*laser\*\*\* flash  
 photolysis techniques. The intrinsic rate consts. for the intramol. [1,3]  
 H and D shifts in dehydrated nonpolar methylcyclohexane at 293 K are 1.7  
 s<sup>-1</sup> and 5.7 .times. 10<sup>-1</sup> s<sup>-1</sup>, resp. The rates for the 1,3-H shift in alc.  
 solvents were significantly enhanced by the basic catalytic action of  
 solvent mol.(s). The exptl. results of temp. and isotope effects showed  
 that the intramol. [1,3] H and D shifts in the photo- \*\*\*Fries\*\*\*  
 \*\*\*rearranged\*\*\* intermediates of PTTH and PTTD proceeded via quantum  
 mech. tunneling at 2 vibrational levels [ $v = v_0$  and  $v = v_1$  ( $\Delta E_H = 3.43$   
 kcal mol<sup>-1</sup>,  $\Delta E_D = 3.80$  kcal mol<sup>-1</sup>)]. According to the tunnel effect  
 theory (TET) proposed by Formosinho, the magnitude of the tunneling  
 frequency factor for this system is smaller than that for the previously  
 reported system (Ph acetate), because of the presence of a sterically  
 bulky triazine ring. Also, it was suggested from the TET that the  
 migrating H for the intramol. [1,3] H shift directly transferred to the  
 carbonyl O (the direct intramol. H shift) without the basic catalytic  
 action of the adjacent triazine ring (the indirect intramol. H shift).

ST tunneling sigmatropic hydrogen shift; \*\*\*rearranged\*\*\* photo  
 \*\*\*Fries\*\*\* intermediate hydrogen shift; dimethoxytolyloxytriazine photo  
 \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*

IT Catalysis

(base, solvent; tunneling effects on 1,3-sigmatropic hydrogen shift in  
 photo- \*\*\*Fries\*\*\* \*\*\*rearranged\*\*\* intermediate of  
 2,4-dimethoxy-6-(p-tolyloxy)-s-triazine)

IT Reaction kinetics

(frequency factor, tunneling; tunneling effects on 1,3-sigmatropic  
 hydrogen shift in photo- \*\*\*Fries\*\*\* \*\*\*rearranged\*\*\*  
 intermediate of 2,4-dimethoxy-6-(p-tolyloxy)-s-triazine)

IT Flash photolysis

( \*\*\*laser\*\*\* ; tunneling effects on 1,3-sigmatropic hydrogen shift  
 in photo- \*\*\*Fries\*\*\* \*\*\*rearranged\*\*\* intermediate of  
 2,4-dimethoxy-6-(p-tolyloxy)-s-triazine)

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*

(photochem.; tunneling effects on 1,3-sigmatropic hydrogen shift in



photo- \*\*\*Fries\*\*\* \*\*\*rearranged\*\*\* intermediate of  
 2,4-dimethoxy-6-(p-tolyloxy)-s-triazine)

IT UV and visible spectra  
 (transient; tunneling effects on 1,3-sigmatropic hydrogen shift in  
 photo- \*\*\*Fries\*\*\* \*\*\*rearranged\*\*\* intermediate of  
 2,4-dimethoxy-6-(p-tolyloxy)-s-triazine)

IT Force constant  
 Hydrogen shift  
 Hydrogen shift kinetics  
 Oscillator model  
 PM3 (molecular orbital)  
 Potential energy  
 Potential energy hypersurface  
 Solvent effect  
 Steric effects  
 Tautomerization kinetics  
 Tunneling  
 Vibrational potential  
 Vibrational state  
 (tunneling effects on 1,3-sigmatropic hydrogen shift in photo-  
 \*\*\*Fries\*\*\* \*\*\*rearranged\*\*\* intermediate of 2,4-dimethoxy-6-(p-  
 tolyloxy)-s-triazine)

IT 7782-39-0, Deuterium, properties  
 RL: PRP (Properties)  
 (isotope effect; tunneling effects on 1,3-sigmatropic hydrogen shift in  
 photo- \*\*\*Fries\*\*\* \*\*\*rearranged\*\*\* intermediate of  
 2,4-dimethoxy-6-(p-tolyloxy)-s-triazine)

IT 33950-62-8  
 RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)  
 (tunneling effects on 1,3-sigmatropic hydrogen shift in photo-  
 \*\*\*Fries\*\*\* \*\*\*rearranged\*\*\* intermediate of 2,4-dimethoxy-6-(p-  
 tolyloxy)-s-triazine)

IT 216366-43-7  
 RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical  
 process); PRP (Properties); RCT (Reactant); FORM (Formation,  
 nonpreparative); PROC (Process); RACT (Reactant or reagent)  
 (tunneling effects on 1,3-sigmatropic hydrogen shift in photo-  
 \*\*\*Fries\*\*\* \*\*\*rearranged\*\*\* intermediate of 2,4-dimethoxy-6-(p-  
 tolyloxy)-s-triazine)

IT 33950-59-3, 2,4-Dimethoxy-6-(p-tolyloxy)-s-triazine  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT  
 (Reactant); PROC (Process); RACT (Reactant or reagent)  
 (tunneling effects on 1,3-sigmatropic hydrogen shift in photo-  
 \*\*\*Fries\*\*\* \*\*\*rearranged\*\*\* intermediate of 2,4-dimethoxy-6-(p-  
 tolyloxy)-s-triazine)

RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L3 ANSWER 16 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1998:411029 CAPLUS  
 DN 129:21347  
 ED Entered STN: 07 Jul 1998  
 TI Model Studies on the Photochemistry of Phenolic Sulfonate Photoacid  
 Generators  
 AU Andraos, J.; Barclay, G. G.; Medeiros, D. R.; Baldovi, M. V.; Scaiano, J.  
 C.; Sinta, R.  
 CS Department of Chemistry, University of Ottawa, Ottawa, ON, K1N 6N5, Can.  
 SO Chemistry of Materials (1998), 10(6), 1694-1699  
 CODEN: CMATEX; ISSN: 0897-4756  
 PB American Chemical Society  
 DT Journal  
 LA English  
 CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 Section cross-reference(s): 22  
 AB The mechanism of photodissocn. and acid generation for three phenolic  
 sulfonate esters, ranging from alkyl, to benzyl, to arom., was  
 investigated by \*\*\*laser\*\*\* flash photolysis and product studies. All  
 the sulfonate esters studied showed the presence of phenoxyl and other  
 complex radicals in the transient spectra. The formation of these complex  
 transients indicates that the radical pair formed upon excitation of the  
 sulfonate can escape the solvent cage, and undergo further chem.  
 transformations. It was obsd. that all of the sulfonate esters  
 investigated resulted in the formation of acidic species. Photoproduct  
 studies indicate that Ph methanesulfonate and Ph toluene-p-sulfonate  
 undergo a photo- \*\*\*Fries\*\*\* type \*\*\*rearrangement\*\*\* and also  
 produce a large excess of phenol with the corresponding sulfonic acid.  
 Upon excitation, Ph toluene-.alpha.-sulfonate undergoes near quant. SO2  
 extrusion, with the formation of no \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 photoproducts; instead it was obsd. that the benzyl radicals, generated by  
 SO2 loss, undergo a "pseudo" \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* to  
 form the ortho and para phenylmethane isomers. Further, the SO2  
 photogenerated undergoes oxidative and hydrolytic processes to form  
 sulfuric and sulfurous acids.  
 ST photolysis sulfonate photoresist photoacid generator; photodissocn acid  
 generation sulfonate ester  
 IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 (photochem.; photolysis and acid generation mechanism of sulfonate  
 esters)  
 IT Flash photolysis  
 Photoresists  
 (photolysis and acid generation mechanism of sulfonate esters)  
 IT 75-75-2, Methanesulfonic acid 14763-60-1, 1-Hydroxyphenyl-4-methyl  
 sulfone 27489-33-4, 1-Hydroxyphenyl-2-methylsulfone  
 RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical  
 process); FORM (Formation, nonpreparative); PROC (Process)  
 (photolysis and acid generation mechanism of Ph methanesulfonate)  
 IT 104-15-4, processes 644-08-6, p-Phenyltoluene 7402-77-9 10371-01-4  
 RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical  
 process); FORM (Formation, nonpreparative); PROC (Process)  
 (photolysis and acid generation mechanism of Ph toluene-p-sulfonate)  
 IT 100-51-6, Benzenemethanol, processes 100-52-7, Benzaldehyde, processes  
 101-53-1, 1-Hydroxyphenyl-4-phenylmethane 103-29-7, Dibenzyl 451-40-1,  
 Benzyl phenyl ketone 2154-56-5, Benzyl radical 7446-09-5, Sulfur  
 dioxide, processes 7664-93-9, Sulfuric acid, processes 7782-99-2,  
 Sulfurous acid, processes 28994-41-4, 1-Hydroxyphenyl-2-phenylmethane  
 RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical  
 process); FORM (Formation, nonpreparative); PROC (Process)  
 (photolysis and acid generation mechanism of Ph toluene-.alpha.-  
 sulfonate)  
 IT 108-95-2, Phenol, processes 2122-46-5, Phenoxyl radical  
 RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical  
 process); FORM (Formation, nonpreparative); PROC (Process)  
 (photolysis and acid generation mechanism of sulfonate esters)  
 IT 640-60-8, Phenyl toluene-p-sulfonate 10271-81-5, Phenyl

toluene-.alpha.-sulfonate 16156-59-5, Phenyl methanesulfonate  
 RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC  
 (Process); RACT (Reactant or reagent)  
 (photolysis and acid generation mechanism of sulfonate esters)

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 1989, P409
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L3 ANSWER 17 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1998:270292 CAPLUS  
 DN 129:40841  
 ED Entered STN: 13 May 1998  
 TI Observation of Acetyl Radical in a Zeolite by Time-Resolved FT-IR  
 Spectroscopy  
 AU Vasenkov, Sergey; Frei, Heinz  
 CS Physical Biosciences Division MS Calvin Laboratory, Lawrence Berkeley  
 National Laboratory University of California, Berkeley, CA, 94720, USA  
 SO Journal of the American Chemical Society (1998), 120(16), 4031-4032  
 CODEN: JACSAT; ISSN: 0002-7863  
 PB American Chemical Society  
 DT Journal  
 LA English  
 CC 22-8 (Physical Organic Chemistry)  
 AB Upon photodissocn. of 2-naphthyl acetate or pinacolone by a UV  
 \*\*\*laser\*\*\* pulse in solvent-free zeolite NaY, a transient absorption  
 has been obsd. around 2125 cm-1 by step-scan FT-IR spectroscopy. The  
 decay time of the absorption is 75 .mu.s at room temp. Frequency and 13C  
 shift reveal that the transient band is the CO stretch of an acetyl  
 radical interacting with poorly shielded Na+ ions, which renders the  
 electronic structure of the radical close to that of acetylium ion.  
 Comparison of the intensities of transient and final product absorptions  
 (2-acetyl-1-naphthol in the case of naphthyl acetate, acetaldehyde for  
 pinacolone) reveals that the acetyl radical represents the main, and  
 probably only reaction channel. This is the first observation of a small  
 radical intermediate of a photoreaction in a zeolite.

ST photodissocn naphthyl acetate zeolite NaY mechanism; pinacolone  
 photodissocn zeolite NaY mechanism  
 IT Photolysis  
 (photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of 2-naphthyl acetate  
 and photodissocn. of pinacolone by UV \*\*\*laser\*\*\* pulse in  
 solvent-free zeolite NaY)  
 IT Zeolite NaY  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of 2-naphthyl acetate  
 and photodissocn. of pinacolone by UV \*\*\*laser\*\*\* pulse in  
 solvent-free zeolite NaY)  
 IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*

\*\*\*Fries\*\*\*      \*\*\*rearrangement\*\*\*  
 (photochem.; photo-      \*\*\*Fries\*\*\*      \*\*\*rearrangement\*\*\*      of  
 2-naphthyl acetate and photodissochn. of pinacolone by UV      \*\*\*laser\*\*\*  
 pulse in solvent-free zeolite NaY)

IT IR spectra  
 (transient; photo-      \*\*\*Fries\*\*\*      \*\*\*rearrangement\*\*\*      of 2-naphthyl  
 acetate and photodissochn. of pinacolone by UV      \*\*\*laser\*\*\*      pulse in  
 solvent-free zeolite NaY)

IT 115-11-7P, preparation  
 RL: BYP (Byproduct); PREP (Preparation)  
 (byproduct; photo-      \*\*\*Fries\*\*\*      \*\*\*rearrangement\*\*\*      of 2-naphthyl  
 acetate and photodissochn. of pinacolone by UV      \*\*\*laser\*\*\*      pulse in  
 solvent-free zeolite NaY)

IT 3170-69-2, Acetyl  
 RL: FMU (Formation, unclassified); RCT (Reactant); FORM (Formation,  
 nonpreparative); RACT (Reactant or reagent)  
 (intermediate; photo-      \*\*\*Fries\*\*\*      \*\*\*rearrangement\*\*\*      of  
 2-naphthyl acetate and photodissochn. of pinacolone by UV      \*\*\*laser\*\*\*  
 pulse in solvent-free zeolite NaY)

IT 75-97-8, Pinacolone 1523-11-1, 2-Naphthyl acetate  
 RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC  
 (Process); RACT (Reactant or reagent)  
 (photo-      \*\*\*Fries\*\*\*      \*\*\*rearrangement\*\*\*      of 2-naphthyl acetate  
 and photodissochn. of pinacolone by UV      \*\*\*laser\*\*\*      pulse in  
 solvent-free zeolite NaY)

IT 75-07-0P, Acetaldehyde, preparation 711-79-5P, 2-Acetyl-1-naphthol  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (photo-      \*\*\*Fries\*\*\*      \*\*\*rearrangement\*\*\*      of 2-naphthyl acetate  
 and photodissochn. of pinacolone by UV      \*\*\*laser\*\*\*      pulse in  
 solvent-free zeolite NaY)

RE.CNT 34      THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD  
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L3 ANSWER 18 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1998:257711 CAPLUS

DN 128:328653

ED Entered STN: 07 May 1998

TI Tunneling effects on the sigmatropic hydrogen shifts in the

photorearranged intermediates of phenyl acetate and N-acetylpyrrole  
studied by \*\*\*laser\*\*\* photolysis

AU Shizuka, H.; Tobita, S.  
CS Department of Chemistry, Gunma University, Kiryu, 376, Japan  
SO JAERI-Conf (1998), 98-002 (Meeting on Tunneling Reaction and Low  
Temperature Chemistry, 1997), 76-84  
CODEN: JECNEC

PB Japan Atomic Energy Research Institute  
DT Journal  
LA English  
CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 22

AB The rate consts. for the sigmatropic hydrogen shifts in the ground state  
of the photorearranged intermediates of Ph acetate and N-acetylpyrrole  
produced by \*\*\*laser\*\*\* photolysis at 266 nm are directly measured in  
several solvents. On the basis of the exptl. results of temp. and isotope  
effects, it is shown that the intramol. 1,3-hydrogen (or deuterium) shift  
of the photo- \*\*\*Fries\*\*\* \*\*\*rearranged\*\*\* intermediate of Ph  
acetate and the 1,2-hydrogen (or deuterium) shift of the photorearranged  
intermediate of N-acetylpyrrole in methylcyclohexane proceed via  
tunnelling processes at two vibrational energy levels under exptl.  
conditions. The theor. considerations for the tunnelling mechanism are  
made by use of the tunnel effect theory proposed by S. Formosinho.

ST phenyl acetate acetylpyrrole photolysis photorearranged intermediate;  
tunneling sigmatropic hydrogen shift photolysis intermediate

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
(photochem.; photolysis study of quantum mech. tunneling mechanism of  
sigmatropic hydrogen shifts in photorearranged intermediates of Ph  
acetate and acetylpyrrole)

IT Photolysis  
Photolysis kinetics  
(photochem. study of quantum mech. tunneling mechanism of sigmatropic  
hydrogen shifts in photorearranged intermediates of Ph acetate and  
acetylpyrrole)

IT Hydrogen shift enthalpy  
Hydrogen shift kinetics  
Molecular orbital  
Tunneling  
(quantum mech. tunneling mechanism of sigmatropic hydrogen shifts in  
photorearranged intermediates of Ph acetate and acetylpyrrole)

IT Potential energy  
Vibrational state  
(quantum mech. tunneling mechanism of sigmatropic hydrogen shifts in  
photorearranged intermediates of Ph acetate and acetylpyrrole via two  
vibrational energy levels)

IT Hydrogen shift  
(sigmatropic; photolysis study of quantum mech. tunneling mechanism of  
sigmatropic hydrogen shifts in photorearranged intermediates of Ph  
acetate and acetylpyrrole)

IT 7782-39-0, Deuterium, properties  
RL: PRP (Properties)  
(isotope effect; photolysis study of quantum mech. tunneling mechanism  
of sigmatropic hydrogen shifts in photorearranged intermediates of Ph  
acetate and acetylpyrrole)

IT 118-93-4, o-Hydroxyacetophenone 1072-83-9, 2-Acetylpyrrole 80753-89-5  
185848-94-6  
RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical  
process); FORM (Formation, nonpreparative); PROC (Process)  
(photochem. study of quantum mech. tunneling mechanism of sigmatropic  
hydrogen shifts in photorearranged intermediates of Ph acetate and  
acetylpyrrole)

IT 122-79-2, Phenyl acetate 609-41-6, N-Acetylpyrrole 207126-27-0,  
2-Acetylpyrrole-d7  
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC  
(Process); RACT (Reactant or reagent)  
(photochem. study of quantum mech. tunneling mechanism of sigmatropic  
hydrogen shifts in photorearranged intermediates of Ph acetate and  
acetylpyrrole)

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L3 ANSWER 19 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1997:776437 CAPLUS  
 DN 128:121507  
 ED Entered STN: 12 Dec 1997  
 TI Photochemistry of N-acetyl and N-benzoyl carbazoles: photo- \*\*\*Fries\*\*\*  
 \*\*\*rearrangement\*\*\* and photoinduced single electron transfer  
 AU Bonesi, Sergio M.; Erra-Balsells, Rosa  
 CS c.c. 74 -suc. 30, Facultad de Ciencias Exactas y Naturales, Departamento  
 de Quimica Organica, Universidad de Buenos Aires, Buenos Aires, 1430,  
 Argent.  
 SO Journal of Photochemistry and Photobiology, A: Chemistry (1997), 110(3),  
 271-284  
 CODEN: JPPCEJ; ISSN: 1010-6030  
 PB Elsevier Science S.A.  
 DT Journal  
 LA English  
 CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 Section cross-reference(s): 73  
 AB The photochem. of two N-acyl carbazoles, N-acetyl and N-benzoyl carbazole,  
 in different pure and mixed org. solvents is studied. Depending on the  
 properties of the medium, photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 and photoinduced single electron transfer (PSET) processes are obsd.  
 yielding the former 1-acyl and 3-acyl carbazoles and the latter  
 3-chloro-N-acyl carbazole. kSV, kq and .phi. for fluorescence emission,  
 conversion of N-acyl carbazole and product formation yields have been  
 measured as well as the properties of the N-acyl carbazole radical cations  
 formed during the PSET process ( \*\*\*laser\*\*\* radiation flash photolysis  
 expts.). The Rehm-Weller equation is used in order to evaluate the  
 .DELTA.G.degree.ET of the PSET processes.  
 ST acetyl benzoyl carbazole photo \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* ;  
 photoinduced single electron transfer carbazole  
 IT Solvent effect  
 (in photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* and flash photolysis  
 of N-substituted carbazole)  
 IT Flash photolysis  
 ( \*\*\*laser\*\*\* ; of N-acetyl and N-benzoyl carbazole)  
 IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 (photo-; of N-acetyl and N-benzoyl carbazole)  
 IT Photoinduced electron transfer  
 (single; of N-acetyl and N-benzoyl carbazole)  
 IT 10336-16-0P, 9H-Carbazole, 9-Acetyl-3-chloro- 189188-71-4P,  
 3-Chloro-9-benzoyl-carbazole  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (flash photolysis product of N-substituted carbazole)  
 IT 574-39-0, N-Acetyl carbazole 19264-68-7, N-Benzoyl carbazole  
 RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)  
 (photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* and flash photolysis)

IT 3215-37-0P, 3-Acetyl carbazole 19264-66-5P, 3-Benzoyl carbazole  
 23592-69-0P, 1-Acetyl carbazole 111960-27-1P, 1-Benzoyl carbazole  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* product of N-substituted  
 carbazole)

IT 86-74-8P, Carbazole 134-81-6P, Ethanedione, diphenyl- 431-03-8P,  
 2,3-Butanedione  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (photolysis product of N-substituted carbazole)

IT 56-23-5, Carbon tetrachloride, properties 64-17-5, Ethanol, properties  
 67-63-0, Isopropanol, properties 67-66-3, Chloroform, properties  
 68-12-2, DMF, properties 71-43-2, Benzene, properties 75-05-8, Methyl  
 cyanide, properties 75-09-2, Methylene chloride, properties 109-99-9,  
 THF, properties 110-82-7, Cyclohexane, properties  
 RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)  
 (solvent used in photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* and  
 flash photolysis of N-substituted carbazole)

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L3 ANSWER 20 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1997:748237 CAPLUS

DN 128:95203

ED Entered STN: 28 Nov 1997

TI Investigation of the photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 reactions of 1- and 2-naphthyl acetates

AU Molokov, I.F.; Tsentalovich, Yu.P.; Yurkovskaya, A.V.; Sagdeev, R.Z.

CS Novosibirsk State University, Novosibirsk 630090, Russia

SO Journal of Photochemistry and Photobiology, A: Chemistry (1997), 110(2),  
 159-165

CODEN: JPPCEJ; ISSN: 1010-6030

PB Elsevier Science S.A.

DT Journal

LA English

CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

AB The investigation of the photo-Fries reaction of 1- and 2-naphthyl acetates (1- and 2-NAs) was performed using stationary photolysis, \*\*\*laser\*\*\* flash photolysis and steady state and time-resolved chem. induced dynamic nuclear polarization (CIDNP). The transient absorption spectra of the 1- and 2-naphthoxyl radicals and the 1-NA and 2-NA triplet states were detected, and the quantum yields and absorption coeffs. were obtained. The influence of a triplet quencher on the naphthoxyl radical quantum yield was studied, and the singlet nature of the primary radical pair was confirmed for both initial compds. On \*\*\*laser\*\*\* flash photolysis of 1-NA, the formation of the ortho product was directly detected, and the rate const. of the [1,3] hydrogen shift reaction was established. The signs of the CIDNP signals during the photolysis of 2-NA point to a singlet precursor of the radical pair giving rise to the rearrangement products, and to a triplet precursor for the disproportionation products of the parent radical pair. A comparison of the slopes of the Stern-Volmer plots for the rearrangement product quantum yield, for triplet CIDNP, and for the optically detected 2-NA triplet state confirms the previously reported assumption about the main role of the excited singlet state and the involvement of two different triplet states in the reaction. A general kinetic scheme for 1- and 2-NA photolysis is proposed.

ST photo \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* naphthyl acetate;  
\*\*\*laser\*\*\* flash photolysis triplet state

IT Absorption spectra  
CIDNP (chemically induced dynamic nuclear polarization)  
Excited triplet state  
Excited triplet state  
\*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
Hydrogen shift  
Physical process kinetics  
(investigation of photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* reactions of 1- and 2-naphthyl acetates)

IT Flash photolysis  
( \*\*\*laser\*\*\* ; investigation of photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* reactions of 1- and 2-naphthyl acetates)

IT 830-81-9, 1-Naphthyl acetate 1523-11-1, 2-Naphthyl acetate  
RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)  
(investigation of photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* reactions of 1- and 2-naphthyl acetates)

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L3 ANSWER 21 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1997:589443 CAPLUS

DN 127:262362

ED Entered STN: 15 Sep 1997

TI Two-photon processes in the photo-Claisen and photo- \*\*\*Fries\*\*\*  
\*\*\*rearrangements\*\*\* . Direct observation of dienic ketenes generated by  
photolysis of transient cyclohexa-2,4-dienones

AU Jimenez, M. Consuelo; Miranda, Miguel A.; Scaiano, J. C.; Tormos, Rosa

CS Departamento de Quimica/Instituto de Tecnologia Quimica UPV-CSIC,  
Universidad Politecnica de Valencia, Valencia, 46071, Spain

SO Chemical Communications (Cambridge) (1997), (16), 1487-1488

CODEN: CHCOFS; ISSN: 1359-7345

PB Royal Society of Chemistry

DT Journal

LA English

CC 22-6 (Physical Organic Chemistry)

AB Using the two- \*\*\*laser\*\*\* two-color technique it has been possible to  
promote two photon chem. in the cases of benzyl Ph ether [PhOR, R = Bn  
(1a)] and Ph acetate [PhOR, R = Ac (1b)]; this is based on the photolysis  
of the transient 6-R-cyclohexa-2,4-dienone intermediates of the  
photo-Claisen and photo- \*\*\*Fries\*\*\* \*\*\*rearrangements\*\*\* to the  
dienic ketenes RCH:CHCH:CHCO.

ST cyclohexadienone intermediate photochem Claisen \*\*\*Fries\*\*\*

\*\*\*rearrangement\*\*\*

IT Ring opening

(electrocyclic, photochem. ring opening of transient cyclohexadienones;  
identification and photolysis of cyclohexa-2,4-dienone intermediates in  
photo-Claisen and photo- \*\*\*Fries\*\*\* \*\*\*rearrangements\*\*\* )

IT UV and visible spectra

(identification and photolysis of cyclohexa-2,4-dienone intermediates  
in photo-Claisen and photo- \*\*\*Fries\*\*\* \*\*\*rearrangements\*\*\* )

IT Claisen rearrangement

\*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
(photochem.; identification and photolysis of cyclohexa-2,4-dienone  
intermediates in photo-Claisen and photo- \*\*\*Fries\*\*\*  
\*\*\*rearrangements\*\*\* )

IT 80753-89-5 195970-42-4

RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical  
process); PRP (Properties); RCT (Reactant); FORM (Formation,  
nonpreparative); PROC (Process); RACT (Reactant or reagent)

(identification and photolysis of cyclohexa-2,4-dienone intermediates  
in photo-Claisen and photo- \*\*\*Fries\*\*\* \*\*\*rearrangements\*\*\* )

IT 195970-43-5 195970-44-6, 1,3,5-Octatriene-1,7-dione

RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation,  
nonpreparative)

(identification and photolysis of cyclohexa-2,4-dienone intermediates  
in photo-Claisen and photo- \*\*\*Fries\*\*\* \*\*\*rearrangements\*\*\* )

IT 122-79-2, Phenyl acetate 946-80-5, Benzyl phenyl ether

RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC  
(Process); RACT (Reactant or reagent)

(identification and photolysis of cyclohexa-2,4-dienone intermediates  
in photo-Claisen and photo- \*\*\*Fries\*\*\* \*\*\*rearrangements\*\*\* )

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L3 ANSWER 22 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1996:121502 CAPLUS  
 DN 124:189110  
 ED Entered STN: 28 Feb 1996  
 TI \*\*\*Laser\*\*\* Flash Photolysis and CIDNP Studies of 1-Naphthyl Acetate  
 Photo- \*\*\*Fries\*\*\* \*\*\*Rearrangement\*\*\*  
 AU Gritsan, Nina P.; Tsentalovich, Yuri P.; Yurkovskaya, Alexandra V.;  
 Sagdeev, Renad Z.  
 CS Institute of Chemical Kinetics and Combustion, Novosibirsk, 630090, Russia  
 SO Journal of Physical Chemistry (1996), 100(11), 4448-58  
 CODEN: JPCHAX; ISSN: 0022-3654  
 PB American Chemical Society  
 DT Journal  
 LA English  
 CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 AB The steady-state and time-resolved CIDNP and flash photolysis methods were  
 used in a detailed study of the photo- \*\*\*Fries\*\*\*  
 \*\*\*rearrangement\*\*\* of 1-naphthyl acetate (I) in acetonitrile and  
 methanol. The main reaction channel is the decay of I through the excited  
 singlet state with the quantum yields 0.17  $\pm$  0.02 in acetonitrile and  
 0.42  $\pm$  0.04 in methanol at room temp. The absorption spectra of the  
 naphthoxyl radical and triplet state of 1-naphthyl acetate were detected.  
 The quantum yield of triplet was estd. as 0.4  $\pm$  0.2 and 0.35  $\pm$  0.17  
 in acetonitrile and methanol, resp. It has been established that the  
 triplet-born radical pairs make a main contribution to the CIDNP of the  
 photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* products. The involvement  
 in the process of two different triplet states of I was supposed. The  
 main decay channel of the lowest triplet state is the triplet-triplet  
 annihilation, while the CIDNP of photo- \*\*\*Fries\*\*\*  
 \*\*\*rearrangement\*\*\* products results from the decay of the upper triplet  
 state of I with a lifetime of a few nanoseconds. The kinetics of CIDNP  
 formation in reaction products has been analyzed, and the rate consts. of  
 the rearrangement of the preceding intermediates at room temp. have been  
 estd.  
 ST photochem \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* naphthyl acetate  
 kinetics; photolysis CIDNP naphthyl acetate \*\*\*Fries\*\*\*  
 \*\*\*rearrangement\*\*\*  
 IT Molecular orbital  
 (INDO, role of excited singlet and triplet states and nature of  
 intermediates in photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of  
 naphthyl acetate)  
 IT Nuclear polarization  
 (chem. induced dynamic, photolysis and CIDNP studies of photo-  
 \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of naphthyl acetate)  
 IT Photolysis  
 (flash, photolysis and CIDNP studies of photo- \*\*\*Fries\*\*\*  
 \*\*\*rearrangement\*\*\* of naphthyl acetate)  
 IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*

(photochem., photolysis and CIDNP studies of photo- \*\*\*Fries\*\*\*  
 \*\*\*rearrangement\*\*\* of naphthyl acetate)

IT Kinetics of \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 (photochem., role of excited singlet and triplet states and nature of  
 intermediates in photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of  
 naphthyl acetate)

IT Energy level transition  
 (singlet, role of excited singlet and triplet states and nature of  
 intermediates in photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of  
 naphthyl acetate)

IT Energy level transition  
 (triplet, role of excited singlet and triplet states and nature of  
 intermediates in photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of  
 naphthyl acetate)

IT 830-81-9, 1-Naphthyl acetate  
 RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC  
 (Process); RACT (Reactant or reagent)  
 (photolysis and CIDNP studies of photo- \*\*\*Fries\*\*\*  
 \*\*\*rearrangement\*\*\* of naphthyl acetate)

IT 33490-96-9, 1-Naphthoxyl  
 RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical  
 process); PRP (Properties); FORM (Formation, nonpreparative); PROC  
 (Process)  
 (quantum calcn. for intermediates in photo- \*\*\*Fries\*\*\*  
 \*\*\*rearrangement\*\*\* of naphthyl acetate)

IT 7782-44-7, Oxygen, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (quencher; role of excited singlet and triplet states and nature of  
 intermediates in photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of  
 naphthyl acetate)

IT 90-15-3, 1-Naphthol 711-79-5, 2-Acetyl-1-naphthol 3669-52-1,  
 4-Acetyl-1-naphthol  
 RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical  
 process); FORM (Formation, nonpreparative); PROC (Process)  
 (role of excited singlet and triplet states and nature of intermediates  
 in photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of naphthyl acetate)

IT 504-60-9, Piperylene  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (triplet quencher; role of excited singlet and triplet states and  
 nature of intermediates in photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 of naphthyl acetate)

L3 ANSWER 23 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1995:1004412 CAPLUS  
 DN 124:175575  
 ED Entered STN: 26 Dec 1995  
 TI Inherently chiral calix[4]arene  
 AU No, Kwanghyun; Kim, Jong Eun  
 CS Dep. of Chemistry, Sookmyung Women's Univ., Seoul, 140-742, S. Korea  
 SO Bulletin of the Korean Chemical Society (1995), 16(11), 1122-5  
 CODEN: BKCSDE; ISSN: 0253-2964  
 PB Korean Chemical Society  
 DT Journal  
 LA English  
 CC 25-29 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)  
 GI

/ Structure 2 in file .gra /

AB Three inherently chiral calix[4]arenes were synthesized as racemates  
 starting from the ethylation at 1,3-distal hydroxy groups of  
 5,11-diphenyl-25,26,27,28-tetrahydroxycalix[4]arene which has two Ph  
 groups at the upper rim in AABB fashion, and then two remaining hydroxy  
 groups were acetylated by treatment with acetyl chloride in the presence  
 of NaH to produce calix[4]arene I. Upon treatment of I with AlCl<sub>3</sub> under  
 \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* conditions, only one acetyl group  
 was rearranged to the para-position to afford a calix[4]arene with AABC  
 substitution \*\*\*pattern\*\*\* at the upper rim of the calix. The  
 structure of chiral calix[4]arenes were confirmed based on NMR and mass  
 spectra.

ST calixarene chiral prepn  
IT 173852-08-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and acetylation of)  
IT 81536-02-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and ethylation of)  
IT 173852-09-0P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and rearrangement of)  
IT 81535-98-0P 173852-10-3P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

L3 ANSWER 24 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1995:482086 CAPLUS

DN 122:264720

ED Entered STN: 12 Apr 1995

TI Tunneling Effects on the 1,3- and 1,5-Sigmatropic Hydrogen Shifts in the  
Ground State of Photo- \*\*\*Fries\*\*\* \*\*\*Rearranged\*\*\* Intermediates  
of Phenyl Acetate Studied by \*\*\*Laser\*\*\* Flash Photolysis

AU Arai, Tadashi; Tobita, Seiji; Shizuka, Haruo

CS Department of Chemistry, Gunma University, Kiryu, 376, Japan

SO Journal of the American Chemical Society (1995), 117(14), 3968-75

CODEN: JACSAT; ISSN: 0002-7863

PB American Chemical Society

DT Journal

LA English

CC 22-4 (Physical Organic Chemistry)

AB The rate consts. for the 1,3- and 1,5-sigmatropic hydrogen shifts in the  
ground state of the photo- \*\*\*Fries\*\*\* \*\*\*rearranged\*\*\*  
intermediates of Ph acetate produced by \*\*\*laser\*\*\* flash photolysis  
at 266 nm were directly measured in several solvents. The rate const. for  
the intramol. 1,3-hydrogen shift (3.6 s<sup>-1</sup>) is greater than that for the  
1,5-hydrogen shift (6.5 .times. 10<sup>-2</sup> s<sup>-1</sup>) in the ground state in  
methylcyclohexane (MCH) at 293 K, contrary to the expectation by the  
Woodward-Hoffmann rule, showing that the heteroatom of the corresponding  
carbonyl oxygen plays an important role for the intramol. hydrogen shifts.  
On the basis of the exptl. results of temp. and isotope effects, it is  
shown that the intramol. 1,3-hydrogen (or deuterium) shift in MCH proceeds  
via tunneling processes at two vibrational energy levels: E = 0 (v = v<sub>0</sub>)  
and E = E<sub>v</sub> (= 3.9 kcal mol<sup>-1</sup> for the hydrogen shift or 4.4 kcal mol<sup>-1</sup> for  
the deuterium shift) (v = v<sub>1</sub>) under the exptl. condition. The temp. and  
isotope effects on the 1,3-shifts can be elucidated by the calcd. rates  
according to the tunnel effect theory proposed by S.J. Formosinho. The  
enhancement of the rates for the 1,3- and 1,5-sigmatropic shifts in polar  
solvents, esp. in alcs., is caused intermolecularly by a basic catalysis  
of the solvents. It is shown that the 1,3- or 1,5-sigmatropic hydrogen  
shift proceeds via the intramol. process at a low concn. of Ph acetate  
(.apprx.2 .times. 10<sup>-3</sup>M) in nonpolar MCH.

ST tunneling effects sigmatropic hydrogen shifts; photo \*\*\*Fries\*\*\*  
\*\*\*rearrangement\*\*\* phenyl acetate

IT Isotope effect  
(deuterium; tunneling effects on the sigmatropic hydrogen shifts in the  
ground state of photo- \*\*\*Fries\*\*\* \*\*\*rearranged\*\*\*  
intermediates of Ph acetate)

IT Tunneling  
(effects on the sigmatropic hydrogen shifts in the ground state of  
photo- \*\*\*Fries\*\*\* \*\*\*rearranged\*\*\* intermediates of Ph acetate)

IT Potential energy surface and hypersurface  
Solvent effect

Transition state structure  
(tunneling effects on the sigmatropic hydrogen shifts in the ground  
state of photo- \*\*\*Fries\*\*\* \*\*\*rearranged\*\*\* intermediates of Ph  
acetate)

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
(photochem., tunneling effects on the and sigmatropic hydrogen shifts  
in the ground state of photo- \*\*\*Fries\*\*\* \*\*\*rearranged\*\*\*  
intermediates of Ph acetate)

IT Hydrogen shift  
(sigmatropic, tunneling effects on the sigmatropic hydrogen shifts in the ground state of photo- \*\*\*Fries\*\*\* \*\*\*rearranged\*\*\* intermediates of Ph acetate)

IT Molecular orbital  
(third-parametric (PM3), tunneling effects on the sigmatropic hydrogen shifts in the ground state of photo- \*\*\*Fries\*\*\* \*\*\*rearranged\*\*\* intermediates of Ph acetate)

IT 7782-39-0, Deuterium, processes  
RL: PEP (Physical, engineering or chemical process); PROC (Process)  
(isotope effect; tunneling effects on the sigmatropic hydrogen shifts in the ground state of photo- \*\*\*Fries\*\*\* \*\*\*rearranged\*\*\* intermediates of Ph acetate)

IT 122-79-2, Phenyl acetate  
RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)  
(tunneling effects on the sigmatropic hydrogen shifts in the ground state of photo- \*\*\*Fries\*\*\* \*\*\*rearranged\*\*\* intermediates of Ph acetate)

L3 ANSWER 25 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1994:482263 CAPLUS

DN 121:82263

ED Entered STN: 20 Aug 1994

TI Direct measurements of the rates of 1,3- and 1,5-sigmatropic hydrogen shifts in the photo- \*\*\*Fries\*\*\* \*\*\*rearrangements\*\*\* of phenyl acetate

AU Arai, Tadashi; Tobita, Seiji; Shizuka, Haruo

CS Department of Chemistry, Gunma University, Kiryu, Gunma, 376, Japan

SO Chemical Physics Letters (1994), 223(5-6), 521-6

CODEN: CHPLBC; ISSN: 0009-2614

DT Journal

LA English

CC 22-6 (Physical Organic Chemistry)

AB The rate consts. for the 1,3- and 1,5-sigmatropic hydrogen shifts of the photo- \*\*\*Fries\*\*\* \*\*\*rearranged\*\*\* intermediates of Ph acetate produced by \*\*\*laser\*\*\* flash photolysis at 266 nm were directly measured in several solvents. The rate const. for the 1,3-hydrogen shift (3.6 s<sup>-1</sup>) was faster than that for the 1,5-shift (6.5.times.10<sup>-2</sup> s<sup>-1</sup>) in the ground state in methylcyclohexane at 293 K, contrary to the expectation by the Woodward-Hoffmann rule. In protic solvents, ethanol and methanol, a remarkable increase in the rate consts. (.apprx.105 s<sup>-1</sup>) was obsd. A tentative mechanism including the role of the non-bonding electrons of the intermediates is discussed.

ST photo \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* phenyl acetate; kinetics mechanism photo \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* ; sigmatropic hydrogen shift

IT Solvent effect  
(in photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of Ph acetate)

IT Kinetics of \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
(photochem., of Ph acetate)

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
(photochem., of Ph acetate, direct measurements of the rates of 1,3- and 1,5-sigmatropic hydrogen shifts in ,)

IT Hydrogen shift  
(sigmatropic, in photo \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of Ph acetate)

IT 122-79-2, Phenyl acetate  
RL: PRP (Properties)  
(1,3- and 1,5-sigmatropic hydrogen shifts in the photo- \*\*\*Fries\*\*\* \*\*\*rearrangements\*\*\* ok kinetics and mechanism of)

IT 1333-74-0  
RL: PRP (Properties)  
(hydrogen shift, sigmatropic, in photo \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of Ph acetate)

L3 ANSWER 26 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1994:469311 CAPLUS

DN 121:69311

ED Entered STN: 06 Aug 1994

TI Preparation of formylated Novolaks and their photoreaction

AU Ito, Nobuyoshi; Fukuda, Hiroyuki; Nakashimma, Yoshihiro

CS Nagoya Munic. Ind. Res. Inst., Nagoya, 456, Japan  
SO Polymer (1994), 35(10), 2040-3  
CODEN: POLMAG; ISSN: 0032-3861  
DT Journal  
LA English  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 76  
AB Formylated Novolaks were prep'd. by the reaction of Novolaks with formic  
acid-acetic anhydride in the presence of pyridine in THF at room temp.  
When the resulting formylated Novolak films were exposed to  
deep-ultra-violet light, photochem. decompn. of the formyl groups was  
obsd. This reaction generates Novolak through decarbonylation of the  
formyl radical, which is formed in the first stage of the photo-  
\*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* . More than 50% of the formyl groups  
decompd. after an exposure of approx. 500 mJ cm<sup>-2</sup>. Both neg. and pos.  
tone \*\*\*images\*\*\* can be manuf'd. by developing these films with a  
suitable solvent.  
ST formylated Novolak photoresist prep'n photoreaction microlithog  
IT Photolysis  
(of formylated Novolaks, for photoresists in microlithog.)  
IT Phenolic resins, uses  
RL: PREP (Preparation)  
(novolak, cresol-based, formylated, prep'n. and photoreaction of)  
IT Resists  
(photo-, Novolak, prep'n. and photoreaction of formylated)  
IT Lithography  
(photo-, formylated Novolaks for microelectronics)  
IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
(photochem., in prep'n. of formylated Novolaks)  
IT 9003-35-4DP, Phenol-formaldehyde co-polymer, formyl and acetyl derivs.  
24979-70-2DP, Poly(p-vinylphenol), formylated 25053-88-7DP,  
p-Cresol-formaldehyde co-polymer, formylated 25053-96-7DP,  
o-Cresol-formaldehyde co-polymer, formylated 25085-50-1DP, formylated  
25086-36-6DP, m-Cresol-formaldehyde co-polymer, formylated  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prep'n. and photoreaction of, photoresist from)

L3 ANSWER 27 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1992:601920 CAPLUS  
DN 117:201920  
ED Entered STN: 15 Nov 1992  
TI Water-soluble photosensitive compounds, photoresistant compositions  
containing them, and patterning of such photoresists  
IN Hayashi, Nobuaki; Ito, Masahito; Morishita, Hajime; Nonogaki, Saburo;  
Odaka, Yoshiyuki; Miura, Seiji; Nishizawa, Shoko  
PA Hitachi, Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 10 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese  
IC ICM G03F007-038  
ICS G03F007-008; H01J009-227; H01L021-027  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04026849	A2	19920130	JP 1990-131283	19900523
PRAI	JP 1990-131283		19900523		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 04026849	ICM	G03F007-038
	ICS	G03F007-008; H01J009-227; H01L021-027
	IPCI	G03F0007-038 [ICM,5]; G03F0007-008 [ICS,5]; H01J0009-227 [ICS,5]; H01L0021-027 [ICS,5]

GI

AB The title water-sol. photosensitive compds. (I) and (II) [Z = H, OH; M = Na, K, NH<sub>4</sub>] are obtained by condensing an acetophenone structure-possessing polymer with an arom. aldehyde possessing an azide group and an aliph. aldehyde (e.g. MeCHO, crotonaldehyde). The title photoresist compn. comprises the above water-sol. photosensitive compd. and a water-sol. polymer which reacts with the former to show reciprocity low failure. The title photoresist compn. coated on a substrate is patternwise exposed in the presence of O<sub>2</sub> and developed to produce a \*\*\*pattern\*\*\* in which the exposed areas produce a \*\*\*pattern\*\*\* smaller in area than the area of the openings in the \*\*\*photomask\*\*\*.

ST photoresist compn high sensitivity; black matrix CRT manuf; acetophenone polymer condensation product

IT Cathode-ray tubes  
(color, black matrix, manuf. of, photoresist compn. for)

IT Resists  
(photo-, contg. acetophenone polymer aldehyde condensation product)

IT 24979-70-2D, p-Hydroxystyrene homopolymer, acetylated, \*\*\*Fries\*\*\*  
\*\*\*rearranged\*\*\*, condensation product with 4-azidobenzaldehyde-12-sulfonic acid salt and acetaldehyde 25231-54-3, Acrylamide-diacetone acrylamide copolymer 25300-64-5D, Maleic acid-styrene copolymer, acetylation product, condensation product with sodium potassium or ammonium 4-azidobenzaldehyde-2-sulfonate and acetaldehyde or croton aldehyde 55305-94-7D, 4-Azidobenzaldehyde-2-sulfonic acid sodium salt, condensation product with acetylated styrene polymer

RL: TEM (Technical or engineered material use); USES (Uses)  
(photoresist compn. contg.)

L3 ANSWER 28 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1992:95465 CAPLUS

DN 116:95465

ED Entered STN: 06 Mar 1992

TI Processes of top-imaged single-layer resists by potassium ion treatment in solution

AU Loong, Wen An; Su, An Na; Wang, Jia Lian; Chu, Cheng Yu

CS Inst. Appl. Chem., Natl. Chiao Tung Univ., Hsinchu, 30050, Taiwan

SO Microelectronic Engineering (1991), 14(3-4), 237-48

CODEN: MIENEF; ISSN: 0167-9317

DT Journal

LA English

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

AB This paper presents new processes for the enhancement of O<sub>2</sub> reactive ion etching (RIE) resistance of 2 single-layer resist systems by selective incorporation of K ions into the resist \*\*\*image\*\*\* in soln. after exposure. One resist system is diazonaphthoquinone (DAQ) and poly(p-formyloxystyrene) (PFS) mixed with a catalytic amt. of triphenylsulfonium hexafluoroarsenate as a photoacid generator. After deep-UV exposure, the photoacid catalyzes the photo- \*\*\*Fries\*\*\*  
\*\*\*rearrangement\*\*\* of PFS to form poly(p-hydroxystyrene) (PHS); DAQ rearranges to form indene carboxylic acid and grafts into PHS via S-O bond formation. A latent \*\*\*image\*\*\* is formed by selective reaction of carboxylic groups with C<sub>5</sub>H<sub>11</sub>COOK in aq. soln. in exposed areas which are resistant to O<sub>2</sub> RIE. Dry developed neg.-tone \*\*\*patterns\*\*\* are obtained by oxygen RIE. The other resist system is AZ1350J, dipping in C<sub>23</sub>H<sub>47</sub>COOK in hexane after deep-UV exposure. C<sub>23</sub>H<sub>47</sub>COOK selectively incorporates into unexposed areas only. Dry developed pos.-tone \*\*\*patterns\*\*\* are obtained by O<sub>2</sub> RIE in this case.

ST lithog photoresist \*\*\*image\*\*\* oxygen etching resistance; potassium ion photoresist \*\*\*image\*\*\* etching resistance

IT Resists  
(photo-, enhancement of oxygen reactive ion etching resistance of \*\*\*images\*\*\* of, using potassium ion treatment)

IT 18206-16-1

RL: USES (Uses)  
(lithog. \*\*\*images\*\*\* from pos. photoresist treated with soln. of, for improved resistance to oxygen reactive ion etching)

IT 60267-30-3, AZ1350J

RL: USES (Uses)  
(lithog. \*\*\*imaging\*\*\* using photoresist layer of, potassium ion treatment of \*\*\*images\*\*\* from, for improved resistance to oxygen reactive ion etching)

IT 57900-42-2, Triphenylsulfonium hexafluoroarsenate  
 RL: USES (Uses)  
 (photoresist compn. based on polyformyloxystyrene and naphthoquinone deriv. and, potassium ion treatment of \*\*\*images\*\*\* from, for improved resistance to oxygen reactive ion etching)

IT 3770-97-6, 1-Oxo-2-diazonaphthoquinone-5-sulfonyl chloride  
 RL: USES (Uses)  
 (photoresist compn. based on polyformyloxystyrene and triphenylsulfonium hexafluoroarsenate and, potassium ion treatment of \*\*\*images\*\*\* from, for improved oxygen reactive ion etching resistance)

IT 59269-51-1D, Poly(hydroxystyrene), reaction product with chlorosulfonylindenecarboxylic acid 135806-09-6D, 7-(Chlorosulfonyl)-1H-indene-3-carboxylic acid, reaction product with poly(hydroxystyrene)  
 RL: USES (Uses)  
 (photoresist \*\*\*image\*\*\* structures from, reaction with potassium ions, for improved resistance to oxygen reactive ion etching)

IT 19455-00-6, Potassium hexanoate  
 RL: USES (Uses)  
 (photoresist \*\*\*image\*\*\* treatment with soln. of, for improved resistance to oxygen reactive ion etching)

IT 80122-70-9, Poly(p-formyloxystyrene)  
 RL: USES (Uses)  
 (photoresist system based on diazonaphthoquinone deriv. and triphenylsulfonium hexafluoroarsenate and, potassium ion treatment of \*\*\*images\*\*\* from, for improved oxygen reactive ion etching resistance)

IT 24203-36-9, Potassium ion(1+), reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with photoresist \*\*\*images\*\*\* , for improved resistance to oxygen reactive ion etching)

IT 7782-44-7, Oxygen, properties  
 RL: PRP (Properties)  
 (reactive ion etching of photoresist \*\*\*images\*\*\* with, potassium ion treatment for improved resistance towards)

L3 ANSWER 29 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1992:95368 CAPLUS  
 DN 116:95368  
 ED Entered STN: 06 Mar 1992  
 TI The mechanism of photo-Fries fragmentation of aryl cinnamates in polymer films and in solution  
 AU Subramanian, P.; Creed, D.; Griffin, A. C.; Hoyle, C. E.; Venkataram, K.  
 CS Dep. Chem. Biochem., Univ. South. Mississippi, Hattiesburg, MS, 39406-5043, USA  
 SO Journal of Photochemistry and Photobiology, A: Chemistry (1991), 61(3), 317-27  
 CODEN: JPPCEJ; ISSN: 1010-6030  
 DT Journal  
 LA English  
 CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 22  
 AB Photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* was obsd. for the aryl cinnamate chromophore in both polyaryl cinnamates and small-mol. models. \*\*\*Laser\*\*\* flash photolysis of solns. of aryl cinnamates and the corresponding polymers leads to phenoxy and cinnamoyl radicals from the cleavage of the C-O ester bond. The formation of these radicals was verified by their independent generation by flash photolysis of phenols (e.g. p-pentyloxyphenol) and aldehydes (e.g. p-methoxycinnamaldehyde). The effects of triplet sensitizers and quenchers on the formation of these transient intermediates and on the formation of the photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* products are reported. It is concluded that these products arise from either the aryl cinnamate singlet state or a short-lived upper triplet state.  
 ST photo Fries fragmentation aryl cinnamate  
 IT Radicals, preparation  
 RL: FORM (Formation, nonpreparative)  
 (formation of, in photo-Fries fragmentation of aryl cinnamates in polymer films and in soln.)  
 IT Energy level excitation  
 (in photo-Fries fragmentation of aryl cinnamate in polymer films and in



soln.)

IT Energy transfer  
(in photolysis of aryl cinnamates in presence of triplet sensitizers and quenchers)

IT Photolysis  
(flash, \*\*\*laser\*\*\* -induced, of aryl cinnamates in polymer films and in soln., effect of triplet sensitizers and quenchers on products in)

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
(photochem., of aryl cinnamates in polymer films and in soln., effect of triplet sensitizers and quenchers on products in)

IT 2757-04-2, Phenylcinnamate 7780-06-5, Isopropyl cinnamate 114350-01-5  
126724-69-4, 4-Pentyloxyphenyl-4'-pentyloxycinnamate 130127-49-0  
138618-24-3, 4-Pentyloxyphenylcinnamate 138618-25-4  
RL: USES (Uses)  
(photo-Fries fragmentation of, mechanism in)

IT 114374-56-0 123585-76-2  
RL: USES (Uses)  
(photo-Fries fragmentation of, mechanism of)

IT 4852-81-7 64267-17-0 86548-40-5  
RL: USES (Uses)  
(photosensitizer, in \*\*\*laser\*\*\* flash photolysis of aryl cinnamates)

IT 85-01-8, Phenanthrene, properties 119-61-9, Benzophenone, properties  
191-07-1, Coronene 206-44-0, Fluoranthene 2154-56-5, Benzyl  
RL: PRP (Properties)  
(photosensitizer, in \*\*\*laser\*\*\* flash photolysis of aryl cinnamates)

L3 ANSWER 30 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1991:643698 CAPLUS

DN 115:243698

ED Entered STN: 29 Nov 1991

TI Chemical actinometers in the 250-270 nm region

AU Murata, Kazuyuki; Yamaguchi, Yoshinari; Shizuka, Haruo; Takamuku, Setsuo

CS Dep. Chem., Gunma Univ., Kiryu, 376, Japan

SO Journal of Photochemistry and Photobiology, A: Chemistry (1991), 60(2), 207-14

CODEN: JPPCEJ; ISSN: 1010-6030

DT Journal

LA English

CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

AB Both 1,2,3,4-tetraphenylcyclobutane (TPCB) and 2,4-dimethoxy-6-phenoxy-s-triazine (DMPT) can be used as chem. actinometers for \*\*\*laser\*\*\* pulses (<1017 photons pulse<sup>-1</sup>) and steady-state light in the 250-270 nm range. The photocycloreversion of TPCB occurs to give trans-stilbene with a reaction quantum yield of 0.29 +/- 0.01 in methylcyclohexane or BuCl at room temp. The photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of DMPT gives the corresponding ortho and para isomers; the reaction quantum yield for the ortho isomer is 0.12 in ethanol or 0.15 in methylcyclohexane. Actinometry with these compds. can be easily done using spectrophotometry.

ST actinometer chem phylcyclobutane methoxyphenoxytriazine

IT Actinometers

(chem., tetraphenylcyclobutane and dimethoxyphenoxytriazine as)

IT 21002-15-3, 2,4-Dimethoxy-6-phenoxy-s-triazine 54515-63-8

RL: USES (Uses)

(chem. actinometer, photochem. reactions of)

IT 33978-98-2P 33978-99-3P

RL: FORM (Formation, nonpreparative); PREP (Preparation)

(formation of, in photochem. reaction of dimethoxyphenoxytriazine chem. actinometer)

IT 103-30-0P, trans-Stilbene

RL: FORM (Formation, nonpreparative); PREP (Preparation)

(formation of, in photochem. reaction of tetraphenylcyclobutene chem. actinometer)

L3 ANSWER 31 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1991:523671 CAPLUS

DN 115:123671

ED Entered STN: 23 Sep 1991

TI Enhanced oxygen reactive ion etching resistance of diazonaphthoquinone-

poly(formyloxystyrene) resist system by photoacid catalyzed photo-  
 \*\*\*Fries\*\*\*      \*\*\*rearrangement\*\*\* and potassium ion treatment in  
 aqueous solution

AU Loong, Wen An; Su, An Na  
 CS Inst. Appl. Chem., Natl. Chiao Tung Univ., Nsinchu, 30050, Taiwan  
 SO Microelectronic Engineering (1991), 13(1-4), 101-4  
 CODEN: MIENEF; ISSN: 0167-9317

DT Journal  
 LA English  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)

AB This paper presents a new process for the enhancement of oxygen reactive  
 ion etching (RIE) resistance of a single-layer, deep UV resist system by  
 selective incorporating of K ion with resist \*\*\*image\*\*\* in aq. soln.  
 after exposure. A resist system of diazonaphthoquinone (DAQ) and  
 poly(p-formyloxystyrene) (PFS) mixed with catalytic amt. of  
 triphenylsulfonium hexafluoroarsenate is exposed to deep UV. Photoacid  
 catalyzes the photo- \*\*\*Fries\*\*\*      \*\*\*rearrangement\*\*\* of PFS to form  
 poly(p-hydroxystyrene) (PHS); DAQ rearranges to form indenecarboxylic acid  
 and grafts into PHS via S-O bond formation. A latent \*\*\*image\*\*\* is  
 formed by selective reaction of carboxylic group with C5H11COOK in aq.  
 soln. in exposed area which is resistant to oxygen RIE. There are no such  
 reactions in unexposed area. Dry developed neg.-tone \*\*\*patterns\*\*\*  
 by oxygen RIE are obtained.

ST etching resistant photoresist diazonaphthoquinone  
 IT Resists  
 (photo-, reactive ion etching-resistant diazonaphthoquinone-  
 poly(formyloxystyrene))

IT 135806-09-6P  
 RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (formation and reaction of, in reactive ion etching-resistant  
 photoresist compn.)

IT 24979-70-2P, Poly(p-hydroxystyrene)  
 RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (formation and reaction of, with indenecarboxylic acid in reactive ion  
 etching-resistant diazonaphthoquinone-poly(formyloxystyrene)  
 photoresists)

IT 19455-00-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with poly(hydroxystyrene)-indenecarboxylic acid graft  
 polymer, in latent \*\*\*image\*\*\* formation in photoresist system)

IT 3770-97-6    57900-42-2, Triphenylsulfoniumhexafluoroarsenate    80122-70-9,  
 Poly(p-formyloxystyrene)  
 RL: USES (Uses)  
 (reactive ion etching-resistant photoresists contg.)

L3 ANSWER 32 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1990:441512 CAPLUS  
 DN 113:41512  
 ED Entered STN: 03 Aug 1990

TI Photoacid catalyzed photo- \*\*\*Fries\*\*\*      \*\*\*rearrangements\*\*\* of  
 poly(p-formyloxystyrene) and formyloxynovolac

AU Loong, Wen An; Chen, Rong Hsiung  
 CS Inst. Appl. Chem., Natl. Chiao Tung Univ., Hsinchu, 30050, Taiwan  
 SO Molecular Crystals and Liquid Crystals (1990), 183, 481-9  
 CODEN: MCLCA5; ISSN: 0026-8941

DT Journal  
 LA English  
 CC 35-8 (Chemistry of Synthetic High Polymers)

AB The doping of photoacid into poly(p-formyloxystyrene) (I) and  
 formyloxynovolac (FN) can catalyze their photo- \*\*\*Fries\*\*\*  
 \*\*\*rearrangements\*\*\* to form poly(p-formyloxystyrene) and novolac, resp.  
 by exposure at 254 nm. Yields of rearrangements of I and FN as well as  
 their contrasts of neg. tone \*\*\*images\*\*\* are improved. Mechanism of  
 acid catalyzed rearrangement and dark room effect of I are investigated.

ST polyformyloxystyrene catalyzed photochem \*\*\*Fries\*\*\*  
 \*\*\*rearrangement\*\*\* ; formyloxynovolac catalyzed photochem \*\*\*Fries\*\*\*  
 \*\*\*rearrangement\*\*\*

IT \*\*\*Fries\*\*\*      \*\*\*rearrangement\*\*\* catalysts  
 (photochem., triarylsulfonium hexafluoroarsenate, for  
 poly(formyloxystyrene) and formyloxynovolac)

IT Phenolic resins, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (novolak, formyloxy derivs., acid-catalyzed photochem. \*\*\*Fries\*\*\*  
 \*\*\*rearrangement\*\*\* of)  
 IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 (photochem., of acid-doped poly(formyloxystyrene) and formyloxynovolac,  
 reaction mechanism and IR spectra in relation to)  
 IT 7732-18-5, Water, vapor  
 RL: USES (Uses)  
 (acid-catalyzed photochem. \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of  
 poly(formyloxystyrene) in presence of, IR spectra in relation to)  
 IT 80122-70-9, Poly(p-formyloxystyrene)  
 RL: USES (Uses)  
 (acid-catalyzed photochem. \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of,  
 dark room effect on, reaction mechanism in)  
 IT 57900-42-2  
 RL: CAT (Catalyst use); USES (Uses)  
 (catalysts, for photochem. \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of  
 poly(formyloxystyrene) and formyloxynovolac)  
 IT 7664-41-7, Ammonia, uses and miscellaneous  
 RL: USES (Uses)  
 (vapor, acid-catalyzed photochem. \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 of poly(formyloxystyrene) in presence of, IR spectra in relation to)

L3 ANSWER 33 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1990:242896 CAPLUS  
 DN 112:242896  
 ED Entered STN: 23 Jun 1990  
 TI Thermal and deep-UV hardening of novolak and its formylation modification  
 applied to the \*\*\*image\*\*\* reversal in microlithography  
 AU Loong, Wen An; Lin, Hwang Kuen; Feng, Nien Tsu  
 CS Inst. Appl. Chem., Natl. Chiao Tung Univ., Hsinchu, 30050, Taiwan  
 SO Cailliao Kexue (1989), 21(4), 231-7  
 CODEN: TLKHAI; ISSN: 0379-6906  
 DT Journal  
 LA Chinese  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 AB Two methods are reported to accomplish \*\*\*image\*\*\* reversal in  
 microlithog. Both methods are simpler in process than the commonly known  
 basic vapor method. The first method involves a masked exposure at 254 nm  
 and concurrent baking at 90.degree. of S-1713 com. pos. resist, followed  
 by room temp. flood exposure at 365 nm. The concurrent bake promotes the  
 crosslinking of novolak and esterification of ketene intermediate and  
 novolak. The products of both reactions are insol. in basic developer.  
 The second method is achieved by formylation of novolak where photo-  
 \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* occurs after 254 nm imagewise  
 exposure, the product of rearrangement being insol. in CH2Cl2 developer.  
 ST microlithog novolak resist \*\*\*image\*\*\* reversal; formylation novolak  
 resist lithog  
 IT Lithography  
 (novolak processing for)  
 IT Formylation  
 (of novolak photoresists, in microlithog.)  
 IT Phenolic resins, uses and miscellaneous  
 RL: USES (Uses)  
 (novolak, processing of, for microlithog.)  
 IT Resists  
 (photo-, polymeric, processing of novolak, for microlithog.)  
 IT 127361-28-8P  
 RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (formation and photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of, in  
 microlithog. using novolak)  
 IT 9016-83-5  
 RL: USES (Uses)  
 (formylation-photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of  
 photoresist from, for microlithog.)  
 IT 123627-10-1, S-1713  
 RL: PROC (Process)  
 (processing of, for microlithog.)

L3 ANSWER 34 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1989:554491 CAPLUS

DN 111:154491  
 ED Entered STN: 28 Oct 1989  
 TI Investigation of the photolysis of polyurethanes based on 4,4'-methylene bis(phenyldiisocyanate) (MDI) using \*\*\*laser\*\*\* flash photolysis and model compounds  
 AU Hoyle, C. E.; Ezzell, K. S.; No, Y. G.; Malone, K.; Thames, S. F.  
 CS Dep. Polymer Sci., Univ. Southern Mississippi, Hattiesburg, MS, 39406-0076, USA  
 SO Polymer Degradation and Stability (1989), 25(2-4), 325-43  
 CODEN: PDSTDW; ISSN: 0141-3910  
 DT Journal  
 LA English  
 CC 35-8 (Chemistry of Synthetic High Polymers)  
 AB Mechanistic evidence is given for the primary pathways leading to the primary photochem. reactions in arom. diisocyanate-based polyurethanes. \*\*\*Laser\*\*\* flash photolysis studies on MDI-based polyurethanes and appropriate model compd. analogs are presented. Transient species are produced by both direct photolysis (248 nm) and indirect photolysis (351 nm) via tert-butylperoxide-generated radicals in soln. Results present strong evidence supporting a dual mechanism for photodegrdn. involving both H2O2 formation and photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*.  
 ST MDI polyurethane photodegrdn mechanism  
 IT Photolysis  
 (of urethanes, mechanism of, as model for polyurethanes)  
 IT Urethane polymers, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (diphenylmethane diisocyanate-based, photochem. degrdn. of, mechanism of)  
 IT Polymer degradation  
 (photochem., of MDI-based polyurethanes, mechanism of)  
 IT 123024-82-8  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (photochem. degrdn. of, mechanism of)  
 IT 5532-90-1, Propyl N-phenylcarbamate 60483-67-2 63379-16-8  
 123132-78-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (photolysis of, mechanism of, as model for MDI-contg. polyurethanes)  
 IT 2479-47-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and reaction of, with Et chloroformate)  
 IT 142-04-1, Aniline hydrochloride  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with acetone)  
 IT 67-64-1, 2-Propanone, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with aniline hydrochloride)  
 IT 541-41-3, Ethylchloroformate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with bis(aniline)propane)  
 L3 ANSWER 35 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1989:174097 CAPLUS  
 DN 110:174097  
 ED Entered STN: 12 May 1989  
 TI A study of the chemical and morphological alterations of polystyrene (PS) and polycarbonate (PC) surfaces induced by excimer \*\*\*laser\*\*\* treatments  
 AU Occhiello, E.; Garbassi, F.; Malatesta, V.  
 CS Cent. Ric. Novara, Ist. Guido Donegani, Novara, Italy  
 SO Journal of Materials Science (1989), 24(2), 569-72  
 CODEN: JMTSAS; ISSN: 0022-2461  
 DT Journal  
 LA English  
 CC 36-2 (Physical Properties of Synthetic High Polymers)  
 AB The effect of \*\*\*laser\*\*\* irradiation on surface morphol. of PS and bisphenol-A PC was studied by XPS, SEM, optical microscopy, and surface profilometry. The dependence of the surface chem. and morphol. properties on wavelength and fluence was investigated. On both materials, no apparent chem. modification was induced by irradiation. At 350 nm, there is no evidence of non-linear effects. Morphol. alterations were induced in the PS subsurface, due to thermal shock effects. The irradiation of both polymers

at 248 and 193 nm did not result in photoassisted oxidn. In the case of PS, etching is evident at 193 nm. Irradn. of PC at 248 nm induces O depletion and photo- \*\*\*Fries\*\*\* \*\*\*rearrangements\*\*\*, whereas at 193 nm O depletion and etching are predominant. In both polymers etching yields peculiar surface morphologies, namely the formation of debris and cone-like structures.

ST \*\*\*laser\*\*\* excimer polymer surface morphol; polystyrene surface morphol \*\*\*laser\*\*\* excimer; polycarbonate surface morphol  
 \*\*\*laser\*\*\* excimer

IT Polycarbonates, properties  
 RL: PRP (Properties)  
 (surface morphol. of, excimer \*\*\*laser\*\*\* effect on)

IT Surface  
 (treatment of, of polystyrene and polycarbonate, by excimer \*\*\*laser\*\*\*, morphol. in relation to)

IT \*\*\*Laser\*\*\* radiation, chemical and physical effects  
 (UV, on surface morphol. of polystyrene and polycarbonate)

IT Polymer morphology  
 (surface, of polystyrene and polycarbonate, excimer \*\*\*laser\*\*\* effect on)

IT 9003-53-6, Polystyrene 25037-45-0  
 RL: PRP (Properties)  
 (surface morphol. of, excimer \*\*\*laser\*\*\* effect on)

L3 ANSWER 36 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1986:609518 CAPLUS  
 DN 105:209518  
 ED Entered STN: 13 Dec 1986  
 TI End-group effects on the wavelength dependence of \*\*\*laser\*\*\* -induced photodegradation in bisphenol-A polycarbonate  
 AU Webb, J. D.; Czanderna, A. W.  
 CS Solar Energy Res. Inst., Golden, CO, 80401, USA  
 SO Macromolecules (1986), 19(11), 2810-25  
 CODEN: MAMOBX; ISSN: 0024-9297  
 DT Journal  
 LA English  
 CC 35-8 (Chemistry of Synthetic High Polymers)  
 AB Changes in the vibrational spectra of capped and uncapped bisphenol A polycarbonate [24936-68-3] films resulting from exposure to pulsed \*\*\*laser\*\*\* radiation at 265, 287, and 308 nm were measured quant. by in situ Fourier-transform IR reflection-absorption spectroscopy. These spectra showed mol. wt.-dependent features which indicated that phenolic end groups in the uncapped polymer, if present in concns. exceeding the water content of the polymer, were hydrogen bonded to the backbone carbonyl groups. The correspondence of changes in the mol.-wt. to the changes in the vibrational spectra of the exposed films was investigated by size-exclusion chromatog. These results indicated that phenolic end groups sensitized polycarbonate to some photodegrdn. reactions (such as crosslinking) at 287 and 265 nm, while inhibiting photo- \*\*\*Fries\*\*\* \*\*\*rearrangements\*\*\*. The hydrogen-bonded carbonyl linkages and phenolic end groups were preferentially degraded, esp. at 287 nm, where phenolic end group absorption predominated. Absorption (and photoactivity) in highly (>99%) capped polycarbonate was greatly reduced at 287 nm.

ST polycarbonate photodegrdn end group effect; \*\*\*laser\*\*\* photodegrdn polycarbonate end group

IT Hydrogen bond  
 (in polycarbonates, photodegrdn. in relation to)

IT Polycarbonates  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 ( \*\*\*laser\*\*\* -induced photodegrdn. of, end group effect on)

IT Polymer degradation  
 (photochem., of polycarbonates, end group effect on)

IT Crosslinking  
 (photochem., of polycarbonates, photodegrdn. in relation to)

IT 10192-62-8  
 RL: PRP (Properties)  
 (UV spectra of, as model for acetyl-terminated bisphenol A polycarbonate)

IT 24936-68-3, reactions 24936-68-3D, acetyl-terminated 25037-45-0  
 104335-97-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)

( \*\*\*laser\*\*\* -induced photodegrdn. of, end group effect on)

L3 ANSWER 37 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1985:578139 CAPLUS  
DN 103:178139  
ED Entered STN: 30 Nov 1985  
TI \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of methoxyphenyl  
3-methylbut-2-enoates  
AU Camps, F.; Coll, J.; Colomina, O.; Messeguer, A.  
CS Inst. Quim. Bio-Org., CSIC, Barcelona, 08034, Spain  
SO Journal of Heterocyclic Chemistry (1985), 22(2), 363-8  
CODEN: JHTCAD; ISSN: 0022-152X  
DT Journal  
LA English  
CC 27-14 (Heterocyclic Compounds (One Hetero Atom))  
OS CASREACT 103:178139  
GI

/ Structure 4 in file .gra /

AB \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of RC6H4O2CCH:CM<sub>2</sub> (I; R = 2-MeO, 3-MeO, 4-MeO) in MeSO<sub>3</sub>H, polyphosphoric acid, AlCl<sub>3</sub>, and under photochem. conditions has been studied. The outcome of the reactions was detd. by the substitution \*\*\*pattern\*\*\* in the starting products and the reaction conditions used. Under Lewis acid catalysis, acylation accounted for the major components of the reaction mixts., leading to the formation of indanones, e.g. II (R<sub>1</sub> = H, R<sub>2</sub> = Me; R<sub>1</sub> = Me, R<sub>2</sub> = H), and 2,3-dihydro-4H-1-benzopyran-4-ones, resp., in the case of o- and m-esters; however, alkylation to afford dihydrocoumarins, e.g. III, was the favored path for p-esters. On the other hand, o-acylation was in all cases the major reaction course in the photochem. rearrangement. Thus, photolysis of I (R = 2-MeO) in MeOH gave isopentenoylphenols IV and V.  
ST \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* methoxyphenyl methylbutenoate  
IT Cyclocondensation reaction  
( \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* and, of methoxyphenyl methylbutenoate)  
IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
(of methoxyphenyl methylbutenoate)  
IT 541-47-9  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(cyclodimerization of)  
IT 90-05-1 150-19-6 150-76-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(esterification by, of methylbutenoic acid)  
IT 123-31-9P, preparation 4394-72-3P 20321-73-7P 29423-72-1P  
29423-73-2P 54874-23-6P 76348-96-4P 83923-91-5P 84346-78-1P  
98910-56-6P 98910-57-7P 98910-58-8P 98910-59-9P 98910-60-2P  
98910-61-3P  
RL: FORM (Formation, nonpreparative); PREP (Preparation)  
(formation of, in \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of methoxyphenyl methylbutenoate)  
IT 84346-76-9P 98910-54-4P 98910-55-5P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)  
IT 4136-26-9P 13229-59-9P 15496-18-1P 98910-62-4P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

L3 ANSWER 38 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1985:470729 CAPLUS  
DN 103:70729  
ED Entered STN: 07 Sep 1985  
TI Magnetic isotope and external magnetic field effects upon the photo-  
\*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of 1-naphthyl acetate  
AU Nakagaki, Ryoichi; Hiramatsu, Mitsuo; Watanabe, Takeshi; Tanimoto, Yoshifumi; Nagakura, Saburo  
CS Inst. Mol. Sci., Okazaki, 444, Japan  
SO Journal of Physical Chemistry (1985), 89(15), 3222-6  
CODEN: JPCHAX; ISSN: 0022-3654

DT Journal  
LA English  
CC 22-6 (Physical Organic Chemistry)  
OS CASREACT 103:70729  
AB The reaction mechanism of the photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
of 1-naphthyl acetate is examd. by steady-state photolysis and  
\*\*\*laser\*\*\* flash photolysis. A radical pair consisting of the  
1-naphthoxyl and acetyl radicals, is a reaction intermediate. The yield  
of an in-cage product (2-acetyl-1-naphthol) exhibits a pos. external  
magnetic field effect for the ester labeled by magnetically active <sup>13</sup>C,  
but no effect for the normal <sup>12</sup>C ester. The magnetic field effect obsd.  
for the labeled ester is quant. or semiquant. explained in terms of the  
radical-pair mechanism by considering hyperfine coupling between  
magnetically active nuclei (<sup>1</sup>H and <sup>13</sup>C) and an unpaired electron in the  
acetyl radical. The in-cage product is formed through the singlet radical  
pair.

ST magnetic isotope effect rearrangement; photochem \*\*\*Fries\*\*\*  
\*\*\*rearrangement\*\*\* mechanism; naphthyl acetate isotope rearrangement  
mechanism

IT Magnetic field, chemical and physical effects  
(carbon-13 isotope effect in presence of, for photo- \*\*\*Fries\*\*\*  
\*\*\*rearrangement\*\*\* of naphthyl acetate)

IT Isotope effect  
(magnetic, on photochem.- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of  
naphthyl acetate, by carbon-13)

IT Solvent effect  
(on photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of naphthyl acetate)

IT Radicals, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(pairs, intermediacy of, in photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
)

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
(photochem., of naphthyl acetate, magnetic carbon-13 isotope effect and  
mechanism of)

IT 90-15-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(acetylation of)

IT 1520-57-6  
RL: PRP (Properties)  
(acetylation with, of naphthol)

IT 711-79-5P 3669-52-1P  
RL: PREP (Preparation)  
(from photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of naphthyl  
acetate)

IT 14762-74-4, properties  
RL: PRP (Properties)  
(magnetic isotope effect of, on photo- \*\*\*Fries\*\*\*  
\*\*\*rearrangement\*\*\* of naphthyl acetate)

IT 830-81-9 96503-52-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of, mechanism of)

L3 ANSWER 39 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1985:176358 CAPLUS  
DN 102:176358  
ED Entered STN: 18 May 1985  
TI The photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* and its use in polymeric  
\*\*\*imaging\*\*\* systems

AU Tessier, T. G.; Frechet, J. M. J.; Willson, C. G.; Ito, H.  
CS Dep. Chem., Univ. Ottawa, Ottawa, ON, KIN-9B4, Can.  
SO ACS Symposium Series (1984), 266 (Mater. Microlithogr.), 269-92  
CODEN: ACSMC8; ISSN: 0097-6156

DT Journal  
LA English  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
OS CASREACT 102:176358  
AB Photolysis of thin films or solns. of poly(p-formyloxystyrene) (I) in  
dioxane or acetonitrile resulted in \*\*\*Fries\*\*\* - \*\*\*rearrangement\*\*\*  
in the ortho-position providing pure p-hydroxystyrene polymer  
photoproduct, and the decarbonylation of I proceeded to near completion.  
Photolysis of poly(p-acetoxystyrene) (II) in acetonitrile soln. also lead

to rearrangement in the ortho-position, and as the reaction proceeded the presence of photoproducts resulted in a drastic decrease of the reaction rate. Max. conversion of .apprx.50% was obtained after prolonged exposure. But prolonged irradiation give rise to secondary polymer chain reactions. Photolysis of poly(Ph methacrylate) (III) in dioxane led to ortho rearranged ketone with a max. conversion of .apprx.25% of the polymer repeating units. Prolonged exposures led to a significant decrease of the mol. wt. of III. In the solid state the rearrangement proceeded with conversion up to 38% of the starting repeating units, and also small amts. of p-hydroxy ketone product were obsd. In the use of poly methacryl anilide) (IV) the rearrangement also occurred by at an extremely slow rate, and prolonged exposure led to Fries degradn. reaction. The photolysis results predicted the \*\*\*imaging\*\*\* potential of the above polymers. The high photoconversion of I relative to other polymers makes it the most attractive for use as a photoresist. The 1 .mu.m thick films of I were imaged with doses of 75-80 mJ/cm2 and pos. \*\*\*image\*\*\* development without loss of film thickness was accomplished with a 10:1:1 mixt. of iso-PrOH, NH4OH, and H2O. The resist sensitivity was .apprx.70 mJ/cm2 in the deep-UV. \*\*\*Imaging\*\*\* characteristics of II were poor, best results were obtained at high exposure doses of 3.1 J/cm2 using a 1:1 mixt. of 3-heptanone and iso-PrOH as the developer, the film thickness was reduced by .apprx.50% during the development. Similar results were obtained with III. The resist from IV did not give fully developed

\*\*\*images\*\*\* even after prolonged exposures at doses >10 J/cm2.  
 ST photolysis \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* polymer \*\*\*imaging\*\*\*  
 ; photoresist \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* polymer lithog;  
 resist photochem \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* polymer  
 IT Resists  
 (photo-, polymeric, based on photo- \*\*\*Fries\*\*\*  
 \*\*\*rearrangement\*\*\* , characteristics of)  
 IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 (photochem., application of, in polymeric \*\*\*imaging\*\*\* systems)  
 IT 95108-92-2P  
 RL: FORM (Formation, nonpreparative); PREP (Preparation)  
 (formation of, in photolysis of poly(acetoxystyrene), photoimaging in  
 relation to)  
 IT 1611-83-2 25189-01-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (photochem. \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of, photoimaging  
 applications of)  
 IT 24979-78-0  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (photolysis of, \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* in, photoresist  
 application of)  
 IT 80122-70-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (photolysis of, \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* in, photoresist  
 applications and characteristics of)  
 IT 95108-90-0P  
 RL: PREP (Preparation)  
 (prepn. and photochem. \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of ,  
 photoimaging in relation to)  
 IT 80396-41-4P  
 RL: PREP (Preparation)  
 (prepn. and photoimaging with)  
 IT 2628-16-2P 2628-17-3P 53498-47-8P 80122-69-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)

L3 ANSWER 40 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1985:114049 CAPLUS  
 DN 102:114049  
 ED Entered STN: 06 Apr 1985  
 TI Poly[p- (formyloxy)styrene]: synthesis and radiation-induced  
 decarbonylation  
 AU Frechet, Jean M. J.; Tessier, Theodore G.; Willson, C. Grant; Ito, Hiroshi  
 CS Ottawa-Carleton Inst. Res. Grad. Stud. Chem., Univ. Ottawa, Ottawa, ON,  
 K1N-9B4, Can.  
 SO Macromolecules (1985), 18(3), 317-21  
 CODEN: MAMOBX; ISSN: 0024-9297  
 DT Journal  
 LA English



CC 35-4 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 74

AB Poly[p-(formyloxy)styrene] (I) [80122-70-9] was prepd. by chem.  
modification of poly(p-hydroxystyrene) or free-radical-initiated polymn.  
of the corresponding monomer. Unlike poly(p-acetoxystyrene) (II)  
[24979-78-0], which undergoes a partial photochem. \*\*\*Fries\*\*\*  
\*\*\*rearrangement\*\*\*, I decarbonylates smoothly when exposed to UV  
irradn. in soln. or in the solid state. The difference in reactivity  
between the 2 acylate polymers is likely due to the lower stability of the  
formyl radical which is formed in the 1st stage of the photo-Fries  
reaction. In addn., while uniform irradn. of 1-.mu. film of II is  
impossible because of the formation of a strongly absorbing and UV  
stabilizing polymer at the surface of the exposed film, I can be used in  
microlithog. processes to produce high-resoln. relief \*\*\*images\*\*\*.  
The \*\*\*images\*\*\* can be developed with pos. or neg. tone by  
differential dissoln. of the exposed and unexposed areas of the polymer  
film by using solvents of appropriate polarities.

ST polyformyloxystyrene decarbonylation; microlithog \*\*\*image\*\*\*  
polyformyloxystyrene; polyacetoxystyrene photochem \*\*\*Fries\*\*\*  
\*\*\*rearrangement\*\*\*

IT Polymer degradation  
(decarbonylation, of poly[(formyloxy)styrene])

IT Decarbonylation  
(of poly[(formyloxy)styrene])

IT Lithographic plates  
(poly[(formyloxy)styrene] for, decarbonylation in relation to)

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
(photochem., of poly(acetoxystyrene))

IT 123-08-0  
RL: USES (Uses)  
(in prepn. of hydroxystyrene)

IT 24979-70-2DP, formylated 80122-70-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and decarbonylation of)

IT 24979-78-0P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and photochem. \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)

IT 2628-17-3P 80122-69-6P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and polymn. of)

L3 ANSWER 41 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1984:165309 CAPLUS

DN 100:165309

ED Entered STN: 12 May 1984

TI Application of the photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* to  
polymeric \*\*\*imaging\*\*\* systems

AU Tessier, T.; Frechet, J. M. J.; Ito, H.; Willson, C. G.

CS Dep. Chem., Univ. Ottawa, Ottawa, ON, K1N 9B4, Can.

SO Polymer Preprints (American Chemical Society, Division of Polymer  
Chemistry) (1984), 25(1), 313-14  
CODEN: ACPPAY; ISSN: 0032-3934

DT Journal

LA English

CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

AB Soln. and solid state photolysis of poly(p-formyloxystyrene) (I) proceeded  
with almost complete decarbonylation, also a small amt. of rearranged  
hydroxyaldehyde product was obsd. Imagewise exposure (12 s) of a Si  
wafer-supported films of I, followed by a wet development provided clean  
relief \*\*\*images\*\*\*.

ST formyloxystyrene polymer resist photolysis photoimaging;  
polyformyloxystyrene photoinduced \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
\*\*\*imaging\*\*\*

IT Photoimaging compositions and processes  
( \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of poly(formyloxystyrene) in  
relation to)

IT Resists  
(photo-, poly(formyloxystyrene) \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*

in relation to)

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
(photochem., of poly(formyloxystyrene), photoimaging application of)

IT 89806-44-0  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(formylation of polyhydroxystyrene by)

IT 28391-39-1  
RL: USES (Uses)  
(photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* in, photoimaging applications of)

IT 1075-49-6P 2628-17-3P  
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and polymn. of)

IT 24979-70-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with formic acid-acetic anhydride)

L3 ANSWER 42 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1982:81863 CAPLUS  
DN 96:81863  
ED Entered STN: 12 May 1984  
TI Catechol O-methyltransferase. 12. Affinity labeling the active site with the oxidation products of 5,6-dihydroxyindole  
AU Borchardt, Ronald T.; Bhatia, Pramila  
CS Dep. Med. Chem., Univ. Kansas, Lawrence, KS, 66044, USA  
SO Journal of Medicinal Chemistry (1982), 25(3), 263-71  
CODEN: JMCMAR; ISSN: 0022-2623  
DT Journal  
LA English  
CC 7-5 (Enzymes)  
AB 5,6-Dihydroxyindole (I) and a series of 4- and/or 7-methylated analogs of I were synthesized and evaluated for their ability to inactivate purified rat liver catechol O-methyltransferase (II). The inactivation of II by these agents could be prevented by excluding O<sub>2</sub> from the incubation mixts., indicating the necessity for their oxidn. to the corresponding aminochromes. Substrate protection studies and kinetic studies suggested that the loss of enzyme activity resulted from the modification of a crucial amino acid residue at the active site of II through reaction with the quinoid oxidn. products. The II-inhibitory activity of the 4- and/or 7-methylated analogs of I argue against a mechanism involving a 1,4-Michael addn. reaction at positions 4 or 7 on the aminochrome. Considering the no. of potential electrophilic centers on the basic aminochrome structure, the site of the reaction might change depending on the arom. substitution \*\*\*pattern\*\*\*. The preferred reaction pathway may be detd. in part by the juxtaposition of the protein nucleophile to the possible sites of attack on the electrophilic ligand, but also in part on the reactivity of the electrophile site which might change with substitution on the arom. ring.

ST catechol methyltransferase affinity labeling hydroxyindole; active site catechol methyltransferase labeling

IT Kinetics, enzymic  
(of inhibition, of catechol methyltransferase)

IT 488-17-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(acetylation or methylation of)

IT 9012-25-3  
RL: BIOL (Biological study)  
(affinity labeling of active site of, with dihydroxyindole oxidn. products)

IT 5090-36-8 59719-88-9 80547-99-5 80548-00-1 80548-01-2  
RL: BIOL (Biological study)  
(catechol methyltransferase inactivation by)

IT 4790-19-6  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(debenzylation of)

IT 60058-99-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(demethylation of)

IT 35236-40-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)

IT 4463-33-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and acetylation of)

IT 3131-52-0P 80547-73-5P 80547-74-6P 80547-75-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and catechol methyltransferase inactivation by)

IT 60059-12-3P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and cyclization of)

IT 80547-84-8P 80547-85-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and demethylation of)

IT 80547-86-0P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and methylation of)

IT 3153-96-6P 80547-81-5P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and nitration of)

IT 5417-20-9P 80547-76-8P 80547-78-0P 80547-79-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and oxidn. of)

IT 80547-82-6P 80547-83-7P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and redn. and cyclization of)

IT 5722-94-1P 80547-77-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and redn. of)

IT 51234-09-4P 80547-80-4P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and use in nitrostyrene deriv. synthesis)

L3 ANSWER 43 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1980:198997 CAPLUS  
 DN 92:198997  
 ED Entered STN: 12 May 1984  
 TI Photochemical processes in polymeric systems. 2. Photochemistry of a polycarbonate of bisphenol A in solution and in the solid phase  
 AU Gupta, Amitava; Liang, Ranty; Moacanin, Jovan; Goldbeck, Robert; Kliger, David  
 CS Jet Propul. Lab., California Inst. Technol., Pasadena, CA, 91103, USA  
 SO Macromolecules (1980), 13(2), 262-7  
 CODEN: MAMOBX; ISSN: 0024-9297  
 DT Journal  
 LA English  
 CC 35-6 (Synthetic High Polymers)  
 Section cross-reference(s): 22, 74

AB Photochem. and photophys. processes in bisphenol A polycarbonate [24936-68-3] were studied using measurements of the quantum yield in photochem. \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* and chain scission, \*\*\*laser\*\*\* kinetic flash spectroscopy, and emission quenching. Quenching studies using o-HOC6H4CO2Ph (I) [118-55-8], trans-1,3-pentadiene [2004-70-8], and O showed self-quenching and singlet-singlet energy transfer to I. Quenching rates confirm the facile migration of singlet energy in the polymer.

ST bisphenol A polycarbonate photochem; \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* photochem polycarbonate; photolysis polycarbonate quantum yield; salicylate phenyl fluorescence quenching; pentadiene fluorescence quenching; fluorescence quenching polycarbonate photochem

IT Photolysis  
 (of polycarbonates, quantum yields in)

IT Polycarbonates  
 RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (photochem. of, quantum yield and fluorescence quenching in relation to)

IT Fluorescence quenching  
(polycarbonate photochem. in relation to)

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*

Polymer degradation  
(photochem., of bisphenol polycarbonates, quantum yield in)

IT 118-55-8 2004-70-8 7782-44-7, uses and miscellaneous  
RL: USES (Uses)  
(fluorescence quenching by, polycarbonate photochem. in relation to)

IT 24936-68-3P, uses and miscellaneous 25037-45-0P  
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(photochem. of, quantum yield and fluorescence quenching in relation to)

L3 ANSWER 44 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1968:86606 CAPLUS  
DN 68:86606  
ED Entered STN: 12 May 1984  
TI Photochemical reactions. XLIII. Ultraviolet irradiation of  
N-phenylurethane and N-phenylthiourethane  
AU Bellus, Daniel; Schaffner, Kurt  
CS Eidg. Tech. Hochsch., Zurich, Switz.  
SO Helvetica Chimica Acta (1968), 51(1), 221-4  
CODEN: HCACAV; ISSN: 0018-019X  
DT Journal  
LA German  
CC 22 (Physical Organic Chemistry)  
GI For diagram(s), see printed CA Issue.  
AB Uv irradsn. of N-phenylurethane PhNHCO<sub>2</sub>Et solns. with wavelength 253.7 nm. resulted in the formation of polymeric material, the characteristic \*\*\*pattern\*\*\* of monomeric products assocd. with Photo- \*\*\*Fries\*\*\* -type \*\*\*rearrangements\*\*\* [fwdarw. Et anthranilate O-H<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>Et, Et p-aminobenzoate], and accompanying dissocn. products [fwdarw. aniline]. N-Phenylthiourethane PhNHC(S)OEt (Ia) showed no tendency to undergo Photo- \*\*\*Fries\*\*\* -type \*\*\*rearrangements\*\*\*. Formation of polymeric material and aniline, and, in the presence of mol. O, cyclodehydrogenation to 2-ethoxybenzothiazole (I) as well as a ready exchange of the S atom in Ia by O occurred instead. 76 references.

ST \*\*\*FRIES\*\*\* \*\*\*REARRANGEMENTS\*\*\* PHOTO; THIOURETHANES IRRADN; IRRADN URETHANES; BENZOTHIAZOLES ETHOXY; URETHANES IRRADN; \*\*\*REARRANGEMENTS\*\*\* PHOTO \*\*\*FRIES\*\*\* ; PHENYL CARBAMATES IRRADN; PHOTO \*\*\*FRIES\*\*\* \*\*\*REARRANGEMENTS\*\*\*

IT Photolysis  
(of ethyl carbanilate and of O-ethyl thiocarbanilate)

IT 101-99-5 3111-89-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(photolysis of)

L3 ANSWER 45 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1967:453953 CAPLUS  
DN 67:53953  
ED Entered STN: 12 May 1984  
TI Analysis of hydroxy 3-coumaranones  
AU Schenck, Gerhard; Huke, M.; Goerlitzer, K.  
CS Freie Univ., Berlin, Fed. Rep. Ger.  
SO Tetrahedron Letters (1967), (22), 2059-61  
CODEN: TELEAY; ISSN: 0040-4039  
DT Journal  
LA German  
CC 27 (Heterocyclic Compounds (One Hetero Atom))  
AB In accordance with the method of Shriner and Grosser (CA 36: 19309), 2,4,5-(HO)3C<sub>6</sub>H<sub>2</sub>COCH<sub>2</sub>Cl, m. 139-40.degree., was prepd. Various 2-hydroxy-.alpha.-chloroacetophenones were converted by the Hoesch ketone synthesis or the \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* to the 3-coumaranones (I) with differing OH substitution \*\*\*patterns\*\*\* ; 6-hydroxy, 4,6-dihydroxy, 5,6-dihydroxy, and 6,7-dihydroxy. I were characterized by UV absorption measured in MeOH with addn. of 0.5% AlCl<sub>3</sub>, 0.5% NaOAc + 1% H<sub>3</sub>BO<sub>3</sub>, 0.002M NaOMe, and satd. NaOAc. Thin-layer chromatograms on polyamide in 12:2:1 CHCl<sub>3</sub>-MeOH-MeCOEt; 10:4:2 CHCl<sub>3</sub>-MeOH-MeCOEt; and 75:20:3 CHCl<sub>3</sub>-Me<sub>2</sub>CO-HCONMe<sub>2</sub> with visualization with Ehrlich reagent showed the purity of I. Sepn. on a cellulose layer gave fugitive sepn. which could be detected by UV fluorescence of the aurone formed. I gave yellow, green-violet, and bright yellow fluorescence for

the above substitution \*\*\*patterns\*\*\* , resp.  
ST HYDROXY COUMARANONES; COUMARANONES HYDROXY  
IT 3260-49-9P 6272-26-0P 6272-27-1P 14771-00-7P 14771-02-9P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

L3 ANSWER 46 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1960:42870 CAPLUS  
DN 54:42870  
OREF 54:8386f-i,8387a  
ED Entered STN: 22 Apr 2001  
TI Yellow dye \*\*\*images\*\*\* by color development  
IN Hoffstadt, Walter F.  
PA General Aniline & Film Corp.  
DT Patent  
LA Unavailable  
CC 5 (Photography)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2921851		19600119	US 1958-726288	19580403
	DE 1069470			DE	
	GB 865032			GB	

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2921851	IPCR	G03C0007-32 [I,A]; G03C0007-32 [I,C]
	NCL	430/388.000; 430/552.000; 564/219.000; 564/328.000; 564/329.000

AB Yellow dye \*\*\*images\*\*\* can be produced simultaneously with cyan and magenta azine dye \*\*\*images\*\*\* by color-forming development with a 2,4-diamino-aniline in the presence of a 1-aroyle-5-amino-2-naphthol coupler. An intermediate was prepd. as follows: To 5-acetamido-2-naphthol 0.05 and BzCl (I) 0.05 in 75 ml. s-tetrachloroethane was added anhyd. AlCl3 0.2 mole with stirring. The mixt. was heated 1 hr., poured into about 250 ml. ice and HCl, dild. to about 750 ml., and made strongly alk. with NaOH. The solids were filtered out, the 2 liquid layers were sepd., and the aq. phase was acidified with AcOH. The solids were again filtered out, washed with H2O, dissolved in pyridine, decolorized with charcoal, and the clear liquid was dild. to the cloud point with H2O. By crystn., a 53.3% yield of 1-benzoyl-5-acetamido-2-naphthol (II) was obtained. Other intermediates similarly prepd. were (listed chloride used in place of I): 1-(2-chloro benzoyl)-5-acetamido-2-naphthol (III), m. 205-6.degree., (2-chlorobenzoyl chloride); 1-(4-methylbenzoyl)-5-acetamido-2-naphthol (IV), m. 219-20.degree., (4-methylbenzoyl chloride); 1-(3-nitrobenzoyl)-5-acetamido-2-naphthol (V) (3-nitrobenzoyl chloride); 5-acetamido-2-naphthyl 4-methoxybenzoate, m. 150%, (p-methoxybenzoyl chloride), which underwent a \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* to 1-(4-methoxybenzoyl)-5-acetamido-2-naphthol (VI), m. about 280.degree.. A coupler was prepd. by refluxing 8 g. II and 100 ml. 3N NaOH 1 1/2 hrs., dilg. with H2O, acidifying with AcOH, and filtering the product. Recrystn. from EtOH gave 87% yield of 5-amino-1-benzoyl-2-naphthol. The following couplers were similarly prepd. from the intermediates shown: 5-amino-1-(2-chlorobenzoyl)-2-naphthol, m. 155.degree., from III; 5-amino-1-(4-methylbenzoyl)-2-naphthol, m. 200.degree., from IV; 5-amino-1-(4-methoxybenzoyl)-2-naphthol, m. 235.degree., from VI; 5-amino-1-(3-nitrobenzoyl)-2-naphthol from V. The coupler may be added to the developer or to the Ag halide photographic emulsion.

IT Photographic development  
(color, with 2,4-diaminoaniline deriv. in presence of  
1-aroyle-5-amino-2-naphthol coupler, yellow dye \*\*\*image\*\*\*  
formation in)

IT Photographic couplers or Photographic color-formers  
(for yellow dye \*\*\*image\*\*\* formation simultaneously with cyan and  
magenta azine dye \*\*\*images\*\*\* )

IT 102079-15-2, Acetamide, N-(6-hydroxy-1-naphthyl)-, p-anisate  
(color coupler)

IT 101576-19-6, Ketone, 5-amino-2-hydroxy-1-naphthyl o-chlorophenyl  
101895-35-6, Acetamide, N-(5-benzoyl-6-hydroxy-1-naphthyl)- 101935-83-5,  
Acetamide, N-(5-o-chlorobenzoyl-6-hydroxy-1-naphthyl)- 102079-14-1,  
Acetamide, N-(5-p-anisoyl-6-hydroxy-1-naphthyl)- 102079-15-2, p-Anisic  
acid, 5-acetamido-2-naphthyl ester 108477-17-4, Acetamide,

N-(6-hydroxy-5-m-nitrobenzoyl-1-naphthyl)-  
(manuf. and use as color coupler)

IT 101600-63-9, Ketone, 5-amino-2-hydroxy-1-naphthyl phenyl 102028-23-9,  
Ketone, 5-amino-2-hydroxy-1-naphthyl p-tolyl 103390-14-3, Ketone,  
5-amino-2-hydroxy-1-naphthyl p-octadecylaminophenyl 107524-06-1, Ketone,  
5-amino-2-hydroxy-1-naphthyl m-nitrophenyl 108774-71-6, Ketone,  
5-amino-2-hydroxy-1-naphthyl p-methoxyphenyl 124129-04-0,  
Octadecanilide, 4'-(5-amino-2-hydroxy-1-naphthoyl)-  
(manuf. and use as photographic color coupler)

IT 102079-02-7, Acetamide, N-(6-hydroxy-5-p-toluoyl-1-naphthyl)-  
(prepn. of)

L3 ANSWER 47 OF 47 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1955:84153 CAPLUS  
DN 49:84153  
OREF 49:15829g-i,15830a  
ED Entered STN: 22 Apr 2001  
TI Hydroxy ketones. I. \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of the phenyl  
and isomeric cresyl esters of 1-naphthoic acid  
AU Saharia, G. S.  
CS Univ. Delhi  
SO Journal of Scientific & Industrial Research (1954), 13B, 544-6  
CODEN: JSIRAC; ISSN: 0022-4456  
DT Journal  
LA Unavailable  
CC 10 (Organic Chemistry)  
AB cf. C.A. 45, 9020c. The Fries migration of the Ph and isomeric cresyl  
esters of 1-naphthoic acid were studied at 120.degree. and 160.degree. in  
the absence of any solvent. To 1 mol 1-naphthyl chloride was added 1.1  
mol PhOH, followed by the addn. of 10% NaOH until alk., cooled in ice, the  
ppt. filtered, washed and crystd. from dil. alc. to give the pure ester  
(I). I (1 mol) mixed with 1.3 mol powd. anhyd. AlCl3, refluxed for 2 h.,  
the mass hydrolyzed with ice-cold HCl (1:1), extd. with Et2O, Et2O ext.  
washed in turn with 2% NaHCO3 soln., 1% Na2CO3 soln. and H2O, Et2O soln.  
dried with anhyd. Na2SO4, the residue triturated with petr. ether contg. a  
few drops of C6H6, which on warming effected the sepn. of the isomeric  
hydroxy ketones. The two ketones were then crystd. from dil. alc. or  
petr. ether. The Na2CO3 ext. on acidification in some cases furnished the  
pure p-hydroxy ketones. The ketones were characterized through their  
2,4-dinitrophenylhydrazones. At higher temps. .omicron.-hydroxy ketones  
were obtained and at lower temps. p-hydroxy ketones. With one exception  
in which the p-ketones were formed from I at the higher temp., all the  
others conformed to the general \*\*\*pattern\*\*\* of migration of acyl  
groups.

IT \*\*\*Rearrangements\*\*\*  
( \*\*\*Fries\*\*\* , of aryl 1-naphthoates)

IT \*\*\*Rearrangements\*\*\*  
( \*\*\*Fries\*\*\* , of aryl 2-naphthoates)

IT Ketones  
Ketones  
(hydroxy)

IT 86-55-5, 1-Naphthoic acid 93-09-4, 2-Naphthoic acid  
(aryl esters, Fries migration of)

IT 39070-85-4, Ketone, p-hydroxyphenyl 1-naphthyl 126260-44-4, Ketone,  
6-hydroxy-m-tolyl 1-naphthyl 433955-30-7, Ketone, p-hydroxyphenyl  
1-naphthyl, 2,4-dinitrophenylhydrazone 860373-19-9, Ketone,  
4-hydroxy-o-tolyl 1-naphthyl 860373-20-2, Ketone, 4-hydroxy-o-tolyl  
1-naphthyl, 2,4-dinitrophenylhydrazone 872789-62-3, Ketone,  
6-hydroxy-m-tolyl 1-naphthyl, 2,4-dinitrophenylhydrazone 872789-64-5,  
Ketone, 4-hydroxy-m-tolyl 1-naphthyl, 2,4-dinitrophenylhydrazone  
874532-45-3, Ketone, 4-hydroxy-m-tolyl 1-naphthyl  
(prepn. of)

=> d his

(FILE 'HOME' ENTERED AT 11:29:02 ON 16 MAR 2006)

FILE 'CAPLUS' ENTERED AT 11:29:07 ON 16 MAR 2006

L1 1755 S (FRIES OR PHOTOFRIES) (5A) (REARRANG?)  
L2 47 S L1 AND (LASER OR PATTERN OR IMAGE OR IMAGING OR MASK OR PHOTO  
L3 47 S L1 AND (LASER OR PATTERN OR IMAGE OR IMAGING OR MASK OR PHOTO

```

=> s (fries or photofries or "photo-fries") (5a) (rearrang?)
      2869 FRIES
        4 PHOTOFRIES
      107075 "PHOTO"
        1247 "PHOTOS"
      108277 "PHOTO"
          ("PHOTO" OR "PHOTOS")
        2869 "FRIES"
        432 "PHOTO-FRIES"
          ("PHOTO" (W) "FRIES")
      155299 REARRANG?
L4      1755 (FRIES OR PHOTOFRIES OR "PHOTO-FRIES") (5A) (REARRANG?)

=> s (hologra?)and (rearrang?)
      18309 HOLOGRA?
      16486 HOLOG
        14 HOLOGS
      16488 HOLOG
          (HOLOG OR HOLOGS)
      21382 HOLOGRA?
          (HOLOGRA? OR HOLOG)
      155299 REARRANG?
L5      21 (HOLOGRA?)AND (REARRANG?)

=> d all 1-25

L5      ANSWER 1 OF 21  CAPLUS  COPYRIGHT 2006 ACS on STN
AN      2005:277347  CAPLUS
DN      144:29650
ED      Entered STN:  31 Mar 2005
TI      Quantum logic via optimal control in  ***holographic***  dipole traps
AU      Dorner, U.; Calarco, T.; Zoller, P.; Browaeys, A.; Grangier, P.
CS      Clarendon Laboratory, University of Oxford, Oxford, OX1 3PU, UK
SO      Los Alamos National Laboratory, Preprint Archive, Quantum Physics (2005)
        1-10, arXiv:quant-ph/0503180, 22 Mar 2005
        CODEN: LNQPF4
        URL: http://xxx.lanl.gov/pdf/quant-ph/0503180
PB      Los Alamos National Laboratory
DT      Preprint
LA      English
CC      74-8 (Radiation Chemistry, Photochemistry, and Photographic and Other
        Reprographic Processes)
AB      The authors propose a scheme for quantum logic with neutral atoms stored
        in an array of  ***holog***  . dipole traps where the positions of the
        atoms can be  ***rearranged***  by using  ***holog***  . optical
        tweezers. In particular, this allows for the transport of two atoms to
        the same well where an external control field is used to perform gate
        operations via the mol. interaction between the atoms. Optimal control
        techniques allow for the fast implementation of the gates with high
        fidelity.
ST      quantum logic  ***holog***  dipole trap
IT      Atoms
        (control of at. motion and transport in time-dependent double-well
        potential; quantum logic via optimal control in  ***holog***  . dipole
        traps)
IT      Integrated circuits
        (gates; quantum logic via optimal control in  ***holog***  . dipole
        traps)
IT      Atom traps
        Dipole
        ***Holography***
        Trapping
        (quantum logic via optimal control in  ***holog***  . dipole traps)
IT      Collisions
        (state selective; quantum logic via optimal control in  ***holog***  .
        dipole traps)
IT      7440-17-7, Rubidium, properties
        RL: PRP (Properties)
        (control of at. motion and transport in time-dependent double-well
        potential; quantum logic via optimal control in  ***holog***  . dipole
        traps)

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RE

- (1) Bergamini, S; JOSA B 2004, V21, P1889 CAPLUS
- (2) Boiron, D; Phys Rev A 1998, V57, P4106
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L5 ANSWER 2 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:719326 CAPLUS

DN 143:86563

ED Entered STN: 03 Sep 2004

TI Retrieval of computer-generated \*\*\*holograms\*\*\* projected onto liquid crystal-photoconducting polymer system

AU Miniewicz, Andrzej; Mysliwiec, Jaroslaw; Gryga, Lukasz; Kajzar, Francois

CS Institute of Physical and Theoretical Chemistry, Wroclaw Univ. of Technology, Wroclaw, 50-370, Pol.

SO Proceedings of SPIE-The International Society for Optical Engineering (2004), 5351(Organic Photonic Materials and Devices VI), 134-143  
CODEN: PSISDG; ISSN: 0277-786X

PB SPIE-The International Society for Optical Engineering

DT Journal

LA English

CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 73

AB Simple liq. crystal panel equipped with a polymeric photoconducting layer can be used for displaying dynamic \*\*\*holog\*\*\* images. It is sufficient to compute the \*\*\*hologram\*\*\* of the object and reconstruct the wave-field optically. This can be done by projection of the binary \*\*\*hologram\*\*\* onto liq. crystal panel with the help of std. video-projector. Illumination of the photoconducting polymeric layer by a white light interferogram leads to tiny mol. \*\*\*rearrangements\*\*\* within the bulk of the liq. crystal layer which form a refractive index grating. They occur as a result of spatially modulated elec. space charge field produced in a polymer. Short \*\*\*holog\*\*\* films displayed at video-rates are achievable with the system based on PVK:TNF polymer and planar nematic liq. crystal mixt. The underlying elec. and optical processes as well as characteristics, performances and limitations of the system are discussed.

ST computer generated \*\*\*hologram\*\*\* retrieval liq crystal photoconducting polymer modulator; spatial light modulator liq crystal photoconducting polymer \*\*\*hologram\*\*\* retrieval

IT Spatial light modulators  
(liq. crystal; retrieval of computer-generated \*\*\*holograms\*\*\* using liq. crystal-photoconducting polymer system acting as spatial light modulator)

IT Liquid crystals  
(nematic; retrieval of computer-generated \*\*\*holograms\*\*\* using



liq. crystal-photoconducting polymer system acting as spatial light modulator)

IT \*\*\*Holographic\*\*\* diffraction gratings  
 \*\*\*Holography\*\*\*  
 (retrieval of computer-generated \*\*\*holograms\*\*\* using liq. crystal-photoconducting polymer system acting as spatial light modulator)

IT 129-79-3, 2,4,7-Trinitrofluorenone 1172-02-7, 2,4,7-Trinitro-9-fluorenylidene malononitrile  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (poly(vinylcarbazole)-doped with; retrieval of computer-generated \*\*\*holograms\*\*\* using liq. crystal-photoconducting polymer system acting as spatial light modulator)

IT 25067-59-8, Poly(vinylcarbazole)  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)  
 (retrieval of computer-generated \*\*\*holograms\*\*\* using liq. crystal-photoconducting polymer system acting as spatial light modulator)

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ED Entered STN: 02 Jun 2003  
 TI Optical peristalsis  
 AU Koss, Brian A.; Grier, David G.  
 CS James Franck Institute and Institute for Biophysical Dynamics, The  
 University of Chicago, Chicago, IL, 60637, USA  
 SO Applied Physics Letters (2003), 82(22), 3985-3987  
 CODEN: APPLAB; ISSN: 0003-6951  
 PB American Institute of Physics  
 DT Journal  
 LA English  
 CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related  
 Properties)  
 Section cross-reference(s): 74  
 AB The authors describe an efficient method for transporting and  
 \*\*\*rearranging\*\*\* mesoscopic objects in three dimensions using short  
 repetitive sequences of \*\*\*holog\*\*\* optical trapping patterns.  
 Material transport in this process is analogous to peristaltic pumping,  
 with the configurations of optical traps mimicking the states of a phys.  
 peristaltic pump. Optical peristalsis can transport large nos. of small  
 particles rapidly and deterministically through complex three-dimensional  
 patterns. The same system also can be used to study transport in a  
 variety of model thermal ratchets.  
 ST optical peristalsis transport \*\*\*rearranging\*\*\* mesoscopic object  
 \*\*\*holog\*\*\* patterning  
 IT Optical traps  
 Transport properties  
 (optical peristalsis for transport and \*\*\*rearranging\*\*\* of small  
 particles)  
 IT Imaging  
 (optical peristalsis for transport and \*\*\*rearranging\*\*\* of small  
 particles with)  
 IT \*\*\*Holography\*\*\*  
 (patterning; optical peristalsis for transport and \*\*\*rearranging\*\*\*  
 of small particles)  
 IT Optical pumping  
 (peristalsis; optical peristalsis for transport and \*\*\*rearranging\*\*\*  
 of small particles)  
 IT Optical modulators  
 (spatial; optical peristalsis for transport and \*\*\*rearranging\*\*\*  
 of small particles with)  
 IT Particles  
 (transport of; optical peristalsis for transport and  
 \*\*\*rearranging\*\*\* of small particles)

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD  
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L5 ANSWER 4 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2002:755268 CAPLUS  
 DN 137:243062

ED Entered STN: 04 Oct 2002  
 TI Methods and apparatus for predicting and generating DNA sequences  
 IN Montague, Harry  
 PA USA  
 SO U.S. Pat. Appl. Publ., 46 pp., Cont.-in-part of U.S. Ser. No. 949,927,  
 abandoned.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 IC ICM G06F019-00  
 ICS C12Q001-68  
 INCL 702020000  
 CC 3-1 (Biochemical Genetics)  
 Section cross-reference(s): 9  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002143471	A1	20021003	US 1999-444981	19991122
PRAI	US 1994-366929	B2	19941230		
	US 1995-455328	B2	19950531		
	US 1997-949927	B2	19971014		

CLASS  
 PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES  
 -----  
 US 2002143471 ICM G06F019-00  
 ICS C12Q001-68  
 INCL 702020000  
 IPCI G06F0019-00 [ICM,7]; C12Q0001-68 [ICS,7]  
 IPCR C12N0015-10 [I,A]; C12N0015-10 [I,C]; C12Q0001-68  
 [I,A]; C12Q0001-68 [I,C]; G06F0019-00 [I,A];  
 G06F0019-00 [I,C]  
 NCL 702/020.000  
 ECLA C12N015/10; C12N015/10C; C12Q001/68A8; G06F019/00C1;  
 G06F019/00C2

AB The inventive method works by assigning complex nos. to a  
 \*\*\*rearranged\*\*\* format of the genetic code, this format using the last  
 codon letters as the organizing force. These nos. verify the genetic code  
 math. and are tied to the behavior of the hydrogen atoms on the hydrogen  
 bridge between DNA strands. This behavior is explained in part by a  
 formula for modeling the wave behavior of the DNA mol. and the  
 \*\*\*holog\*\*\* behavior of the DNA mol. as an information-storing  
 material. Distances on a hydrogen ladder between 2 DNA strands are  
 measured and expressed as lines in a plane such that the lines have a  
 slope equal to the pitch of the DNA helix. The distances are equated with  
 codons and amino acids are assigned based on said distances and in  
 relationship to statistical frequency of occurrence in nature.

ST app method modeling predicting codon DNA sequence

IT Helix (conformation)

(DNA, identifying and predicting; methods and app. for predicting and  
generating DNA sequences)

IT Hydrogen bond

(distance mapping between DNA strands; methods and app. for predicting  
and generating DNA sequences)

IT Codons

RL: BSU (Biological study, unclassified); BIOL (Biological study)  
(identifying and predicting; methods and app. for predicting and  
generating DNA sequences)

IT Computer application

Simulation and Modeling

(methods and app. for predicting and generating DNA sequences)

IT DNA

RL: BSU (Biological study, unclassified); BIOL (Biological study)  
(methods and app. for predicting and generating DNA sequences)

L5 ANSWER 5 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:262200 CAPLUS

DN 137:26042

ED Entered STN: 09 Apr 2002

TI \*\*\*Holographic\*\*\* recording mechanisms of gratings in indium oxide  
films using 325 nm helium-cadmium laser irradiation

AU Grivas, C.; Mailis, S.; Eason, R. W.; Tzamali, E.; Vainos, N. A.

CS Optoelectronics Research Centre (ORC), University of Southampton,

Southampton, SO17 1BJ, UK  
SO Applied Physics A: Materials Science & Processing (2002), 74(4), 457-465  
CODEN: APAMFC; ISSN: 0947-8396  
PB Springer-Verlag  
DT Journal  
LA English  
CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
AB UV (325 nm) \*\*\*holog\*\*\* . recording of gratings in indium oxide films  
fabricated by reactive pulsed laser deposition has been investigated as a  
function of growth temp., oxygen pressure and angle of incidence of the  
plasma plume on the substrate. The influence of the ambient environment  
(air or vacuum) and the film temp. during recording has also been studied.  
Large steady state refractive index changes up to 6 .times. 10-3 were  
obsd. in layers grown at an oblique angle of 75.degree.. About 77% of the  
magnitude of these changes residues after thermal annealing and is  
attributed to UV-induced permanent structural \*\*\*rearrangements\*\*\* .  
In contrast, refractive index changes in films grown at normal incidence  
were smaller in magnitude and completely reversible.  
ST indium oxide film \*\*\*holog\*\*\* recording grating mechanism UV laser  
IT \*\*\*Holographic\*\*\* diffraction gratings  
\*\*\*Holographic\*\*\* recording materials  
Microstructure  
( \*\*\*holog\*\*\* . recording mechanisms of gratings in indium oxide  
films using 325 nm helium-cadmium laser irradiation.)  
IT Electric conductivity  
Refractive index  
( \*\*\*holog\*\*\* . recording mechanisms of gratings in indium oxide  
films using 325 nm helium-cadmium laser irradiation. in relation to)  
IT 204634-73-1, Indium oxide (In2O3)  
RL: NUU (Other use, unclassified); USES (Uses)  
( \*\*\*holog\*\*\* . recording mechanisms of gratings in indium oxide  
films using 325 nm helium-cadmium laser irradiation.)  
IT 1312-43-2DP, Indium oxide (In2O3), nonstoichiometric  
RL: PNU (Preparation, unclassified); PRP (Properties); TEM (Technical or  
engineered material use); PREP (Preparation); USES (Uses)  
( \*\*\*holog\*\*\* . recording mechanisms of gratings in indium oxide  
films using 325 nm helium-cadmium laser irradiation.)

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L5 ANSWER 6 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2001:450552 CAPLUS  
 DN 135:202902  
 ED Entered STN: 22 Jun 2001  
 TI Phenomenon of period-doubling in \*\*\*holographic\*\*\* periodic structures  
 exposed to UV radiation  
 AU Gulyaev, Sergey N.; Isaev, Igor V.  
 CS Department of Physical Electronics, St. Petersburg State Technical  
 University, St. Petersburg, 195251, Russia  
 SO Proceedings of SPIE-The International Society for Optical Engineering  
 (2001), 4348(Nondestructive Testing and Computer Simulations in Science  
 and Engineering), 59-67  
 CODEN: PSISDG; ISSN: 0277-786X  
 PB SPIE-The International Society for Optical Engineering  
 DT Journal  
 LA English  
 CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 AB This paper presents the exptl. study of the period-doubling phenomenon  
 occurring during the multicycle processing procedure incorporating the  
 exposure of Ag halide photoemulsion with the primary recorded  
 \*\*\*holog\*\*\* . structure to the short-wave UV radiation, washing and  
 drying. It is suggested that the simultaneous presence of two contrary  
 photochem. processes: photodecompn. and radiation hardening in the gelatin  
 results in instability of the primary \*\*\*holog\*\*\* . structure and in  
 the formation of the spatial subharmonic of the surface relief. The  
 phenomenon may be considered as a process of the self-organization  
 initiated by instability of the macrostructure on a \*\*\*rearrangement\*\*\*  
 of the microstructure on the mol. level. The period-doubling phenomenon  
 has been found to occur in the expts. with the UV sources of a various  
 spectral compn.; the mercury-vapor lamp and the excimer lamps operating on  
 the mixts. of Xe + Cl2 and Kr + Cl2.  
 ST \*\*\*holog\*\*\* periodic structure period doubling UV exposure photog  
 emulsion  
 IT \*\*\*Holography\*\*\*  
 Photochemistry  
 Photographic emulsions  
 (period-doubling in \*\*\*holog\*\*\* . periodic structures recorded in  
 photog. emulsions and exposed to UV radiation)  
 RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD  
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 light and heat, (in Russian) 1972

L5 ANSWER 7 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2001:148050 CAPLUS  
 DN 134:346377  
 ED Entered STN: 01 Mar 2001  
 TI Cooperative two-photon effects in chalcogenide photoresists  
 AU Sfez, B. G.; Rosenblum, G.; Kotler, Z.; Lyubin, V.; Klebanov, M.  
 CS Electro-Optics Department, NRC Soreq, Yavne, 81800, Israel  
 SO Materials Science in Semiconductor Processing (2000), 3(5/6), 499-504  
 CODEN: MSSPFQ; ISSN: 1369-8001

PB Elsevier Science Ltd.  
 DT Journal  
 LA English  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 AB Photosensitive chalcogenide glasses are very promising materials for pulsed \*\*\*holog\*\*\* ., pulsed photolithog. and pulsed optical information recording due to their exceptional sensitivity to pulsed light excitation. The authors present a comprehensive study of the dynamics of the pulse photoresponse of 0.3-1.0 .mu.m thick chalcogenide glassy As50Se50 thin films using a transient-grating method. Both the decrease of transparency and a change of the dissoln. rate were recorded after single Nd: YAG and ArF laser pulse and about (1-5) .times. 1000 times larger energy was necessary to obtain the same changes using CW radiation. The authors show that when excited by a short laser pulse, two different time scales behavior and different intensity dependence of short- and long-time scale signals are present: the short-time signal behaves linearly with the input power but the long-time signal behaves quadratically with the input power. Such behavior reflects a fast electronic process followed by a slow structural \*\*\*rearrangement\*\*\* (the after-pulse effect). The obtained data indicate that the strong increase of photosensitivity following a short intense pulsed light excitation is due to a two-photon effect that aids the process of structural \*\*\*rearrangement\*\*\* as when two photons weaken or break the neighboring bonds, the probability of structural transformation increases significantly.  
 ST two photon effect chalcogenide photoresist  
 IT Arsenide glasses  
 Selenide glasses  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)  
 (arsenic selenide; cooperative two-photon effects in chalcogenide photoresists)  
 IT Photoresists  
 Two-photon absorption  
 (cooperative two-photon effects in chalcogenide photoresists)  
 IT \*\*\*Holographic\*\*\* recording materials  
 \*\*\*Holography\*\*\*  
 (pulse; cooperative two-photon effects in chalcogenide photoresists)  
 IT 7440-38-2, Arsenic, properties 7782-49-2, Selenium, properties  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)  
 (selenide glass; cooperative two-photon effects in chalcogenide photoresists)  
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 L5 ANSWER 8 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2001:25348 CAPLUS  
 DN 134:287757  
 ED Entered STN: 11 Jan 2001  
 TI Laser-induced surface and bulk reorientation of the director in azo-dye-doped liquid crystal cells

AU Serak, S.; Kovalev, A.; Agashkov, A.; Gleeson, H. F.; Watson, S. J.;  
Reshetnyak, V.; Yaroshchuk, O.

CS Institute of Electronics, National Academy of Sciences of Belarus, Minsk,  
220090, Belarus

SO Optics Communications (2001), 187(1-3), 235-247  
CODEN: OPCOB8; ISSN: 0030-4018

PB Elsevier Science B.V.

DT Journal

LA English

CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

AB The director reorientation in the liq. crystals (LCs) cells initiated by  
the trans-cis isomerization of azo-dyes was studied with the aid of  
pump-probe-beam expts. Two different types of the samples were used,  
namely, a planar aligned LC layer, doped with an azo-dye, placed between  
substrates coated with rubbed poly(vinyl alc.) (PVA) films, and an undoped  
LC layer placed between substrates, one of which (input) was coated with  
an untreated azo-polymer film and other one was coated with rubbed PVA  
film. The cells were excited with nanosecond pulses of the second  
harmonic of an Nd:YAG laser. By comparing the reorientation dynamics with  
the help of dynamic \*\*\*holog\*\*\* . method in both samples it was  
established that the values of development times of the orientational  
effects were the same. The reorientation develops within 15-17 .mu.s and  
the efficiency of the orientational gratings is 13-15%. In both kinds of  
samples the director orientation on the output surface with the rubbed PVA  
coating was not changed after irradiation. Contrary, the orientation of the  
director on the input substrate was changed in both cases. In case of a  
LC cell with azo-modified surface the reorientation is due to the  
photoisomerization of the azo-polymer film. In case of the cell with  
azo-dye-doped LC layer the photoisomerization of dye in the bulk of LC  
together with PVA film \*\*\*rearrangement\*\*\* on input substrate exert an  
influence on the director reorientation.

ST director reorientation liq crystal azo dye dopant; photoinduced director  
reorientation liq crystal azo dye dopant; photoisomerization  
photoorientational response liq crystal azo dye dopant

IT Interfacial energy  
(anchoring; photoorientational responses of liq. crystal mols. in  
azo-dye-doped liq. crystal cells studied by dynamic \*\*\*holog\*\*\* .  
and polarimetry methods)

IT Isomerization  
(cis-trans, photochem.; photoorientational responses of liq. crystal  
mols. in azo-dye-doped liq. crystal cells studied by dynamic  
\*\*\*holog\*\*\* . and polarimetry methods)

IT \*\*\*Holography\*\*\*  
(dynamic; photoorientational responses of liq. crystal mols. in  
azo-dye-doped liq. crystal cells studied by dynamic \*\*\*holog\*\*\* .  
and polarimetry methods)

IT Liquid crystal displays  
Molecular reorientation  
Optical transmission  
(photoorientational responses of liq. crystal mols. in azo-dye-doped  
liq. crystal cells studied by dynamic \*\*\*holog\*\*\* . and polarimetry  
methods)

IT 9002-89-5, Poly(vinyl alcohol)  
RL: DEV (Device component use); USES (Uses)  
(photoorientational responses of liq. crystal mols. in azo-dye-doped  
liq. crystal cells studied by dynamic \*\*\*holog\*\*\* . and polarimetry  
methods)

IT 40817-08-1, 5CB 119989-05-8  
RL: DEV (Device component use); PEP (Physical, engineering or chemical  
process); PROC (Process); USES (Uses)  
(photoorientational responses of liq. crystal mols. in azo-dye-doped  
liq. crystal cells studied by dynamic \*\*\*holog\*\*\* . and polarimetry  
methods)

IT 2491-74-9, 4-Dimethylamino-4'-nitroazobenzene  
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical  
process); PROC (Process); USES (Uses)  
(photoorientational responses of liq. crystal mols. in azo-dye-doped  
liq. crystal cells studied by dynamic \*\*\*holog\*\*\* . and polarimetry  
methods)

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L5 ANSWER 9 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2000:809451 CAPLUS  
 DN 134:4539  
 ED Entered STN: 19 Nov 2000  
 TI 1999 R.U. Lemieux Award Lecture Adventures with azo-, azoxy-, and  
 hydrazoarenes: from the Wallach to the benzidine \*\*\*rearrangement\*\*\*  
 Molecular electronics  
 AU Buncel, Erwin  
 CS Department of Chemistry, Queen's University, Kingston, ON, K7L 3N6, Can.  
 SO Canadian Journal of Chemistry (2000), 78(10), 1251-1271  
 CODEN: CJCHAG; ISSN: 0008-4042  
 PB National Research Council of Canada  
 DT Journal; General Review  
 LA English  
 CC 22-0 (Physical Organic Chemistry)  
 Section cross-reference(s): 41, 73, 76  
 AB A review, with 106 refs. The studies with arom. azo-, azoxy-, and  
 hydrazo-dye mols., comprising kinetic and equil. studies, as well as  
 synthesis of novel mols. having photogenic properties, are described under  
 the following highlights: A. Wallach \*\*\*rearrangement\*\*\* and cognate  
 studies with azoxyarenes - (1) Elucidation of the mechanism of the Wallach  
 \*\*\*rearrangement\*\*\* of azoxybenzene through the kinetic observation of a  
 two-proton process which, together with a pKa study, was interpreted from  
 formation of a deoxygenated, dicationic, sym. species as a key,  
 short-lived reaction intermediate. (2) The proposal of a general  
 acid-catalyzed pathway in concd. H2SO4 (catalysis by H2SO4 and H3SO4+).  
 (3) Elucidation of the consecutive sulfonations of reaction products of  
 azoxybenzene in the 100% H2SO4 region, and the diprotonation equil. for  
 p-hydroxyazobenzene, thus shedding light on past reaction pathway and  
 product studies. (4) The observation of a novel reaction pathway for  
 2,4,6,2',4',6'-hexamethylazoxybenzene. (5) The observation of a dichotomy  
 of reaction pathways for .alpha.- and .beta.-2-phenylazoxynaphthalenes:  
 reaction via the dicationic intermediate and via quinoid intermediate  
 species; comprising two isomeric compds. reacting by different pathways to  
 give the same product. (6) Identification and structure proof of .alpha.-



and .beta.-isomers obsd. for the first time in the peracid oxidn. of phenylazopyridine. (7) Observation of a rate const. ratio of 22,000 in the \*\*\*rearrangement\*\*\* of these .alpha.- and .beta.-isomers, and the proposal of differential barriers for transition states leading to a tricationic intermediate. B. Benzidine \*\*\*rearrangement\*\*\* and cognate studies - (8) Observation of the acid-catalyzed hydroxylation of phenylazopyridine to p-hydroxyphenylazopyridine and the proposal of an SNAr mechanism with formation of an intermediate hydrazo species in the reaction. (9) First study of benzidine type \*\*\*rearrangement\*\*\* -disproportionation of phenylhydrazopyridine in acid media. (10) Proposal of a A .fwdarw. B .fwdarw. C .fwdarw. D type reaction profile for the consecutive hydroxylation.fwdarw.disproportionation processes of phenylazopyridine in aq. H2SO4. (11) Proposal of 10-.pi. and 14.pi.-electron electrocyclic processes in the benzidine type \*\*\*rearrangement\*\*\* -disproportionation of phenylhydrazopyridine. (12) Identification and structural elucidation of a dimer formed from phenylazopyridine as a minor product and proposal of a reaction mechanism. C. Facile acid-catalyzed demethylation via SNAr/A-Se2 mechanisms and studies of tautomerism - (13) Observation of an abnormally facile acid-catalyzed cleavage (demethylation) of 4-methoxyphenylazopyridine via an SNAr mechanism. (14) Observation of two reaction pathways, SNAr and A-SE2, for the consecutive demethylations of 3,4-dimethoxyphenylazopyridine, with rate const. ratio of 7,000:1 favoring the SNAr process. (15) Quantitation of the tautomeric and protonation equil. of 4-hydroxyphenylazopyridine, produced in (13). D. A new solvent polarity scale, mol. switches, and mol. electronics - (16) Establishment of a .pi.azo\* solvent polarity scale based on solvatochromism of azomerocyanine mols. (Buncel's dye). (17) Some glimpses are presented of current forays into mol. electronics, as emanating from the above studies: (a) spiropyran (SP)merocyanine (MC) thermo- and photochromic mol. switch systems; (b) synthesis and characterization of azo-functionalized star-burst dendrimers with photoswitchable properties and potential applications in optical data storage systems, \*\*\*holog\*\*\* . gratings, and drug delivery systems as host mols.

ST review Lemieux award lecture; azoarene review; azoxyarene review; hydrazoarene review; benzidine \*\*\*rearrangement\*\*\* hydrazoarene review; Wallach \*\*\*rearrangement\*\*\* azoxyarene review; mol electronics review

IT Azo dyes

Molecular electronics

(R.U. Lemieux award lecture on adventures with azo-, azoxy-, and hydrazoarenes, and Wallach and benzidine \*\*\*rearrangements\*\*\* , and mol. electronics)

IT Azo compounds

Azoxy compounds

RL: MSC (Miscellaneous)

(R.U. Lemieux award lecture on adventures with azo-, azoxy-, and hydrazoarenes, and Wallach and benzidine \*\*\*rearrangements\*\*\* , and mol. electronics)

IT \*\*\*Rearrangement\*\*\*

(Wallach; R.U. Lemieux award lecture on adventures with azo-, azoxy-, and hydrazoarenes, and Wallach and benzidine \*\*\*rearrangements\*\*\* , and mol. electronics)

IT \*\*\*Rearrangement\*\*\*

(benzidine; R.U. Lemieux award lecture on adventures with azo-, azoxy-, and hydrazoarenes, and Wallach and benzidine \*\*\*rearrangements\*\*\* , and mol. electronics)

IT Organic compounds, miscellaneous

RL: MSC (Miscellaneous)

(hydrazo; R.U. Lemieux award lecture on adventures with azo-, azoxy-, and hydrazoarenes, and Wallach and benzidine \*\*\*rearrangements\*\*\* , and mol. electronics)

RE.CNT 106 THERE ARE 106 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L5 ANSWER 10 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1999:742727 CAPLUS

DN 132:42457

ED Entered STN: 23 Nov 1999

TI Nonlinear optical effects in chalcogenide photoresists

AU Rosenblum, G.; Sfez, B. G.; Kotler, Z.; Lyubin, V.; Klebanov, M.

CS ElectroOptics Department, NRC Soreq, Yavne, 81800, Israel

SO Applied Physics Letters (1999), 75(21), 3249-3251

CODEN: APPLAB; ISSN: 0003-6951

PB American Institute of Physics

DT Journal

LA English

CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 57

AB Both the after-pulse effect and the dynamic characteristics of photostructural transformations induced in glassy As<sub>0.5</sub>Se<sub>0.5</sub> films by pulsed 532 nm excitation were studied. The after-pulse effect study demonstrated more than a 103 times increase of the photosensitivity in case of pulsed excitation. Dynamic characteristics showed a dual time scale behavior and different intensity dependence of transient and long time scale signals. The obtained data indicate that the strong increase of photosensitivity following short intense pulsed light excitation is due to a two-photon effect that aids the process of structural

\*\*\*rearrangement\*\*\*

ST nonlinearity chalcogenide photoresist arsenic selenide grating

IT Arsenide glasses

Selenide glasses

RL: DEV (Device component use); PRP (Properties); USES (Uses)

(arsenic selenide; nonlinear optical effects in chalcogenide photoresists contg.)

IT Nonlinear optical properties

(in chalcogenide photoresists)

IT Photoresists

(nonlinear optical effects in chalcogenide)

IT \*\*\*Holography\*\*\*

(nonlinear optical effects in chalcogenide photoresists for)

IT Diffraction gratings

(nonlinear optical effects in chalcogenide photoresists in relation to)

IT 7440-38-2, Arsenic, properties 7782-49-2, Selenium, properties

RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(nonlinear optical effects in chalcogenide photoresists contg.)

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L5 ANSWER 11 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1997:675446 CAPLUS

DN 127:285851

ED Entered STN: 24 Oct 1997

TI \*\*\*Holographic\*\*\* recording in ultrathin amorphous selenium films.  
Recording mechanism and apparent erasability

AU Ballesteros, J. M.; Hernandez, R.; Herreros, J. M.; Afonso, C. N.;  
Petford-Long, A. K.; Doole, R. C.

CS Instituto Optica, Madrid, E-28006, Spain

SO Applied Physics A: Materials Science & Processing (1997), 65(4/5), 463-467  
CODEN: APAMFC; ISSN: 0947-8396

PB Springer

DT Journal

LA English

CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

AB \*\*\*Holog\*\*\* . recording was performed for the 1st time in ultrathin (20  
nm thick) amorphous Se films. Two different exptl. configurations leading  
to spatial frequencies of 360 and 1000 lines/mm were studied. Whereas a  
high diffraction efficiency (>1%) is achieved in the low-frequency regime,  
partial erasability is feasible in the high-frequency case. Electron  
microscopy-based techniques show that the whole grating is in the  
amorphous phase, the dark fringes are denser than the bright ones, and  
there are no traces of oxidn. Transmittance measurements show a blue  
shift in the absorption edge of the films upon laser irradiation. The results  
are discussed in terms of film densification, accomplished through

\*\*\*rearrangements\*\*\* in the amorphous Se chains, the heat flow along the  
direction of the grating vector playing an important role.

ST \*\*\*holog\*\*\* recording ultrathin amorphous selenium film

IT Optical diffraction  
(diffraction efficiency in ultrathin amorphous Se films after  
\*\*\*holog\*\*\* . recording)

IT \*\*\*Holographic\*\*\* diffraction gratings

\*\*\*Holography\*\*\*

( \*\*\*holog\*\*\* . recording mechanism in ultrathin amorphous Se films  
and apparent erasability)

IT 7782-49-2, Selenium, properties

RL: PEP (Physical, engineering or chemical process); PRP (Properties);  
PROC (Process)

(amorphous; \*\*\*holog\*\*\* . recording mechanism in ultrathin amorphous  
Se films and apparent erasability)

L5 ANSWER 12 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1997:390156 CAPLUS

DN 127:95635

ED Entered STN: 23 Jun 1997

TI Synthesis and characteristics of photochromic 2-(1',2'-dimethyl-3'-  
indolyl)-3-(2''-methyl-3''-benzo[b]thiophenyl) maleic anhydride and its  
polystyrene derivatives

AU Kim, Jun-Won; Ahn, Kwang-Hyun; Kim, Hongdoo; Chang, Taihyun

CS Inst. Laser Engineering, Kyunghee Univ., Kyungkido, 449-701, S. Korea

SO Pollimo (1997), 21(3), 512-519  
 CODEN: POLLDG; ISSN: 0379-153X

PB Polymer Society of Korea

DT Journal

LA Korean

CC 35-2 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 36, 73

AB Photochromic 2-(1',2'-dimethyl-3'-indolyl)-3-(2''-methyl-3''-benzo[b]thiophenyl) maleic anhydride (DIMBMA) was synthesized by electrocyclic reaction. The new synthetic route gave a better yield than previously reported thio-Claisen \*\*\*rearrangement\*\*\* method. Partially aminomethylated polystyrene was used to label DIMBMA. DIMBMA in benzene soln. or polystyrene film turned into the cyclic form by 488 nm wavelength and using 632.8 nm or ambient light it was easily reverted. The reverse reaction did not proceed in dark condition and its life time seemed extremely long. The forced Rayleigh scattering was used to measure the diffusion coeff. of DIMBMA and its \*\*\*holog\*\*\* efficiency in benzene soln.

ST photocyclization dimethyl indolylmethyl benzothiophenyl maleic anhydride; photochromism dimethyl indolylmethyl benzothiophenyl maleic anhydride; aminomethylated polystyrene attached dimethylindolylmethylbenzothiophenyl maleic anhydride; Raleigh scattering indolylmethyl benzothiophenyl maleic anhydride; diffusion dimethyl indolylmethyl benzothiophenyl maleic anhydride

IT Photochromism  
 (of 2-(1',2'-dimethyl-3'-indolyl)-3-(2''-methyl-3''-benzo[b]thiophenyl)maleic anhydride and its polystyrene derivs.)

IT Diffusion  
 (of 2-(1',2'-dimethyl-3'-indolyl)-3-(2''-methyl-3''-benzo[b]thiophenyl)maleic anhydride in benzene)

IT Cyclization  
 (photocyclization, reversible; of photochromic 2-(1',2'-dimethyl-3'-indolyl)-3-(2''-methyl-3''-benzo[b]thiophenyl)maleic anhydride and its polystyrene derivs.)

IT \*\*\*Holography\*\*\*  
 (prepn. and characteristics of photochromic 2-(1',2'-dimethyl-3'-indolyl)-3-(2''-methyl-3''-benzo[b]thiophenyl) maleic anhydride and its polystyrene derivs.)

IT 167022-19-7P  
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and characteristics of photochromic 2-(1',2'-dimethyl-3'-indolyl)-3-(2''-methyl-3''-benzo[b]thiophenyl) maleic anhydride and its polystyrene derivs.)

IT 9003-53-6DP, Polystyrene, aminomethylated, reaction products with 2-(1',2'-Dimethyl-3'-indolyl)-3-(2''-methyl-3''-benzo[b]thiophenyl) maleic anhydride 167022-19-7DP, reaction products with aminomethylated polystyrene  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and characteristics of photochromic 2-(1',2'-dimethyl-3'-indolyl)-3-(2''-methyl-3''-benzo[b]thiophenyl) maleic anhydride polystyrene derivs.)

IT 107-06-2, 1,2-Dichloroethane, reactions 120-72-9, Indole, reactions 143-33-9, Sodium cyanide 1195-14-8, 2-Methylbenzo[b]thiophene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (prepn. of photochromic 2-(1',2'-dimethyl-3'-indolyl)-3-(2''-methyl-3''-benzo[b]thiophenyl)maleic anhydride)

IT 603-76-9P, N-Methylindole 875-79-6P, 1,2-Dimethylindole 1505-53-9P, 2-Methylbenzo[b]thiophene-3-acetic acid 16957-90-7P, 3-Chloromethyl-2-Methylbenzo[b]thiophene 91093-21-9P, 3-Cyanomethyl-2-Methylbenzo[b]thiophene  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. of photochromic 2-(1',2'-dimethyl-3'-indolyl)-3-(2''-methyl-3''-benzo[b]thiophenyl)maleic anhydride)

IT 192139-43-8P  
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (reversible photocyclization of 2-(1',2'-dimethyl-3'-indolyl)-3-(2''-methyl-3''-benzo[b]thiophenyl)maleic anhydride with formation of)

AN 1997:197263 CAPLUS  
 DN 126:284136  
 ED Entered STN: 26 Mar 1997  
 TI Photochemical hole burning and photooptical properties of doped dye molecules in linear polymers  
 AU Horie, K.; Machida, S.  
 CS Department of Chemistry and Biotechnology, Faculty of Engineering, The University of Tokyo, Tokyo, 113, Japan  
 SO Polymers as Electrooptical and Photooptical Active Media (1996), 1-36. Editor(s): Shibaev, Valery P. Publisher: Springer, Berlin, Germany. CODEN: 64CPAN  
 DT Conference; General Review  
 LA English  
 CC 73-0 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 36, 41  
 AB A review, with 116 refs., of photochem. hole burning and related photooptical properties of doped dye materials and chromophores in linear polymers. Topics discussed include hole burning mechanisms, high-temp. hole burning and thermal stability of holes, photon-gated hole burning systems, required properties for photochem. hole-burning materials for practical applications, single-mol. spectroscopy, elec. field readout and \*\*\*holog\*\*\* . detection, photoinduced refractive index change and birefringence of dye and polymer systems, optical phase conjugation using saturable absorber dyes, and photorefractive effect of photoconducting electro-optic polymers. The results have application in the design of frequency-domain optical storage and recording systems.  
 ST review photochem hole burning dye polymer; optical storage recording hole burning review; photorefractive hole burning dye review  
 IT Electron transfer  
 (donor-acceptor; in mechanisms of photochem. hole burning and photooptical properties of doped dye mols. in linear polymers)  
 IT Chromophores  
 (dye; photochem. hole burning and photooptical properties of doped dye mols. in linear polymers for design of optical recording medium)  
 IT Isomerization  
 (in mechanisms of photochem. hole burning and photooptical properties of doped dye mols. in linear polymers)  
 IT Tautomerization  
 (of protons; in mechanisms of photochem. hole burning and photooptical properties of doped dye mols. in linear polymers)  
 IT Birefringence  
 Cyanine dyes  
 Dyes  
 Electrooptical effect  
 Electrooptical materials  
 Optical recording  
 Photoconductors  
 Photorefractive effect  
 Spectral hole burning  
 (photochem. hole burning and photooptical properties of doped dye mols. in linear polymers for design of optical recording medium)  
 IT Polymers, properties  
 Porphyrins  
 RL: PRP (Properties)  
 (photochem. hole burning and photooptical properties of doped dye mols. in linear polymers for design of optical recording medium)  
 IT Hydrogen bond  
 ( \*\*\*rearrangement\*\*\* of; in mechanisms of photochem. hole burning and photooptical properties of doped dye mols. in linear polymers)  
 IT Photodynamic action  
 (sensitization, of photoreactive matrix; in mechanisms of photochem. hole burning and photooptical properties of doped dye mols. in linear polymers)  
 IT 574-93-6D, Phthalocyanine, derivs.  
 RL: PRP (Properties)  
 (photochem. hole burning and photooptical properties of doped dye mols. in linear polymers for design of optical recording medium)

ED Entered STN: 17 Jun 1995  
 TI Self-organization of the photorefractive scattering in KNbO3 in a hexagonal spot array  
 AU Banerjee, P. P.; Yu, H -L.; Kukhtarev, N.  
 CS Department Electrical and Computer Engineering, University Alabama Huntsville, Huntsville, AL, 35899, USA  
 SO IEEE Nonlinear Opt.: Mater., Fundam., Appl. (1994), 60-2 Publisher: IEEE, New York, N. Y.  
 CODEN: 61JJAJ  
 DT Conference  
 LA English  
 CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 AB In this paper the authors describe a new nonlinear phenomenon obsd. during scattering of a single Ar laser beam in a photorefractive KNbO3:Fe crystal. A vertically polarized laser beam initially scatters in a cone angle  $V \sim 2$  degrees behind the crystal, and later \*\*\*rearranges\*\*\* in a hexagonal spot array: the transmitted beam is surrounded by six spots lying on the scattering cone. These six spots may rotate about the center, and the rotation speed and the intensity ratio of the peripheral spots to the central spot are dependent on the intensity and diam. of the incident beam. This remarkable self-organization of the scattering cone into a hexagonal spot array may be explained by a \*\*\*holog\*\*\* . intermode scattering which develops in two stages. In the first stage, scattered light is \*\*\*rearranged\*\*\* into a cone due to intermode scattering, forming the first generation of gratings. At the second stage, waves scattered in the cone write new \*\*\*holog\*\*\* . gratings (second generation gratings), and those amongst them that have \*\*\*holog\*\*\* . grating vectors equal to the strongest gratings from the first generation gratings are enhanced. This \*\*\*holog\*\*\* . self-organization model explains the appearance of hexagonal spot structure around the transmitted beam.  
 ST nonlinear photorefractive scattering potassium niobate iron  
 IT Optical nonlinear property  
 (refraction, self-organization of photorefractive scattering in KNbO3 in a hexagonal spot array)  
 IT 7439-89-6, Iron, properties  
 RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)  
 (self-organization of photorefractive scattering in KNbO3 in a hexagonal spot array)  
 IT 12030-85-2, Potassium niobate (KNbO3)  
 RL: PRP (Properties)  
 (self-organization of photorefractive scattering in KNbO3 in a hexagonal spot array)  
 L5 ANSWER 15 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1994:667565 CAPLUS  
 DN 121:267565  
 ED Entered STN: 26 Nov 1994  
 TI Two image recording and selective reconstruction by using polarization \*\*\*hologram\*\*\* recorded on amorphous As2S3 thin film  
 AU Woo, Hwa Je; Cha, Sung Do; Shin, Seung Ho  
 CS Dep. Phys., Kangwon Natl. Univ., Chunchon, 200-701, S. Korea  
 SO Sae Mulli (1993), 33(6), 649-55  
 CODEN: NWPYA4; ISSN: 0374-4914  
 DT Journal  
 LA Korean  
 CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 AB Diffraction characteristics of the polarization \*\*\*hologram\*\*\* recorded in amorphous As2S3 thin film were studied. Two Ar ion laser beams which have the orthogonal circular polarization were used to record the polarization \*\*\*hologram\*\*\* . In the expt. 1st order diffraction efficiency is monotonously increased up to 0.65% at 250 mW/cm2 recording beam power d. and given as a function of the ellipticity of reading beam polarization. The diffraction efficiencies of the polarization \*\*\*hologram\*\*\* , which well explained the exptl. results were derived theor. by using Jones transmission matrix. By using the characteristics of polarization \*\*\*holograms\*\*\* , the selective reconstruction of 2 images recorded on the same point of the thin film were successfully performed without the \*\*\*rearrangement\*\*\* of optical system.  
 ST arsenic sulfide polarization \*\*\*holog\*\*\* image recording

IT Optical diffraction  
(two image recording and selective reconstruction by using polarization  
\*\*\*hologram\*\*\* recorded on amorphous As<sub>2</sub>S<sub>3</sub> thin film)  
IT \*\*\*Holography\*\*\*  
(polarization, two image recording and selective reconstruction by  
using polarization \*\*\*hologram\*\*\* recorded on amorphous As<sub>2</sub>S<sub>3</sub> thin  
film)  
IT 1303-33-9, Arsenic sesquisulfide  
RL: PRP (Properties)  
(two image recording and selective reconstruction by using polarization  
\*\*\*hologram\*\*\* recorded on amorphous As<sub>2</sub>S<sub>3</sub> thin film)

L5 ANSWER 16 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1991:546472 CAPLUS

DN 115:146472

ED Entered STN: 05 Oct 1991

TI Mechanism of phase contrast formation in the recording layers based on  
dichromated gelatin

AU Gomza, Yu. P.; Kuzilin, Yu. E.; Mel'nichenko, Yu. B.; Shilov, V. V.

CS USSR

SO Uspekhi Nauchnoi Fotografii (1990), 26, 124-36

CODEN: UNFKAS; ISSN: 0502-823X

DT Journal

LA Russian

CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

AB Structural changes in dichromated gelatin during hdog. recording process  
were studied using wide- and small angle x-ray scattering methods. Phase  
compn. of the model system gelatin-H<sub>2</sub>O-iso-PrOH was studied using light  
scattering. Photoactivation of (NH<sub>4</sub>)<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> stimulated profound structural  
\*\*\*rearrangement\*\*\* in the gelatin layer related with crosslinking of  
the polar parts of gelatin mols. by photoproduced Cr(III). Mechanisms of  
development processes in exposed and unexposed regions are discussed.

ST dichromated gelatin \*\*\*holog\*\*\* mechanism phase contrast

IT Gelatins, properties

RL: PRP (Properties)

(dichromated, structural changes in, during \*\*\*holog\*\*\* . recording  
processes, x-ray scattering in study of)

IT \*\*\*Holography\*\*\*

(mechanism of processes of, in dichromated gelatin, x-ray scattering in  
study of)

IT 7789-09-5

RL: USES (Uses)

( \*\*\*holog\*\*\* . recording processes in gelatin layers contg.,  
mechanism of structure of changes in, x-ray scattering in study of)

IT 7732-18-5, Water, uses and miscellaneous

RL: USES (Uses)

(phase compn. of model system contg. gelatin and iso-Pr alcs. and,  
\*\*\*holog\*\*\* . recording on dichromated gelatin in relation to)

IT 67-63-0, 2-Propanol, uses and miscellaneous

RL: USES (Uses)

(phase compn. of model system contg. gelatin and water and,  
\*\*\*holog\*\*\* . recording in relation to)

L5 ANSWER 17 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1989:431154 CAPLUS

DN 111:31154

ED Entered STN: 21 Jul 1989

TI Properties of chromium(V) complexes in gelatin layers

AU Vinogradov, S. A.; Katenin, S. B.; Shagisultanova, G. A.

CS Leningr. Gos. Pedagog. Inst., Leningrad, USSR

SO Zhurnal Prikladnoi Khimii (Sankt-Peterburg, Russian Federation) (1989),  
62(2), 446-8

CODEN: ZPKHAB; ISSN: 0044-4618

DT Journal

LA Russian

CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

AB Irradn. of dichromated gelatin films at 10-110 K with Ar laser produced  
Cr(V) complexes having different stability at room temp. due to 2  
mechanisms of photoredn. of Cr(VI) by gelatin mols. During exposure of  
the layer of room temp. geometrical \*\*\*rearrangement\*\*\* of the Cr(V)



complexes took place. To increase storage time of the prepd. layers of dichromated gelatin, they should be kept at darkness at lower temp. to decrease dark-reaction of Cr(V) complexes.

ST dichromated gelatin photoreaction chromium five complex; \*\*\*holog\*\*\*

IT photolysis dichromated gelatin

IT Gelatins, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)  
(dichromated, photolysis of, processes of chromium(V) complex photoproducts in)

IT \*\*\*Holography\*\*\*  
(photochem. of dichromated gelatins for)

IT 14280-17-2D, Chromium ion(5+), complexes

RL: PRP (Properties)  
(properties of, in photolyzed dichromated gelatin)

L5 ANSWER 18 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1988:85235 CAPLUS

DN 108:85235

ED Entered STN: 05 Mar 1988

TI Destruction of \*\*\*holograms\*\*\* recorded on reoxane

AU Veniaminov, A. V.; Popov, A. P.

CS USSR

SO Optika i Spektroskopiya (1987), 63(6), 1346-50

CODEN: OPSPAM; ISSN: 0030-4034

DT Journal

LA Russian

CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

AB The mechanism of decompn. of halograms recorded in polymeric reoxane material included thermochem. \*\*\*rearrangement\*\*\* of the image carriers, the substituted anthracene mols. and its photooxide, and diffusion of this mols. in the matrix. \*\*\*Holog\*\*\* . relaxometry with reconstruction of the \*\*\*hologram\*\*\* using different light wavelength was used to reveal the complex nature of the chem. destruction of the \*\*\*holograms\*\*\* . In a slow component of this process (which detcs. the lifetime of the \*\*\*hologram\*\*\* ) a significant role of atm. O was confirmed.

ST \*\*\*holog\*\*\* recording reoxane \*\*\*hologram\*\*\* destruction

IT \*\*\*Holography\*\*\*  
(decompn. of \*\*\*holograms\*\*\* recorded by, on reoxane, mechanism in)

IT 73297-94-6, Reoxane

RL: USES (Uses)  
(decompn. of \*\*\*holograms\*\*\* recorded in films of, mechanism in)

L5 ANSWER 19 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1986:59077 CAPLUS

DN 104:59077

ED Entered STN: 23 Feb 1986

TI Zero-phonon lines and new aspects of the photochemical hole burning

AU Rebane, Karl K.

CS Inst. Phys., Tartu, USSR

SO Crystal Lattice Defects and Amorphous Materials (1985), 12(1-4), 427-40

CODEN: CLDMDJ; ISSN: 0732-8699

DT Journal

LA English

CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

AB The 1st exptl. results of the photochem. hole burning (PHB) by picosecond pulses and a new method, photochem. accumulated stimulated photon echo, (PASPE), are presented. Complete temporal and spatial information contained in a signal of picosecond (and subpicosecond) duration can be stored in the photochem. active spectrally selective medium via PHB and reproduced later by PASPE. Doppler-scanning as a method to study narrow holes was developed and applied to perform fast spectral domain PHB measurements. The holes in glasses narrow with the decreasing PHB measurement times. This indicates the presence of some kinds of slow processes of \*\*\*rearrangements\*\*\* in glassy matrixes at low temps. leading to spectral diffusion of the holes.

ST glass photochem hole burning; photon echo photochem hole burning

IT Laser radiation, chemical and physical effects  
(hole-burning by, in org. glass)

IT Photon

(photochem. accumulated simulated photon echo, in org. glass)

IT Optical nonlinear property  
(photochem. hole burning, in org. glass)

IT Hole  
(spectral diffusion of, in org. glass)

IT \*\*\*Holography\*\*\*  
(time-domain)

IT 9003-53-6  
RL: PRP (Properties)  
(photochem. hole burning and phase relaxation time of octaethylporphine in matrix of)

IT 100-42-5, properties 500-77-6  
RL: PRP (Properties)  
(photochem. hole burning in)

IT 2683-82-1  
RL: PRP (Properties)  
(picosecond hole burning and phase relaxation time in polystyrene matrix contg.)

L5 ANSWER 20 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1985:603663 CAPLUS  
DN 103:203663  
ED Entered STN: 14 Dec 1985  
TI Reversibility of the effect of photoinduced birefringence in poly(vinyl cinnamate) films  
AU Kozenkov, V. M.; Katyshev, E. G.; Barachevskii, V. A.; Kisilitsa, P. P.; Naumova, N. A.  
CS Nauchno-Issled. Inst. Org. Poluprod. Krasitelei, Moscow, USSR  
SO Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (1985), 30(4), 281-6  
CODEN: ZNPFAG; ISSN: 0044-4561

DT Journal  
LA Russian  
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

AB Cyclic formation and erasure were studied of birefringence in continuously irradiated poly(vinyl cinnamate) layers during periodical switching of the orientation of a polarization vector of the activating radiation. The source of the activating linearly polarized radiation was He-Cd (.lambda. = 325 nm) or N (.lambda. simeq. 337 nm) laser. High cyclicity was related with reversible photostructural transformations detd. by an orientational \*\*\*rearrangement\*\*\* of an absorbing center comprising a chromophore and its nearest surroundings.

ST photoinduced reversible birefringence polyvinyl cinnamate; vinyl cinnamate polymer photoinduced refraction; reversibility dual beam photoinduced refraction

IT Recording  
(reversibility of photoinduced birefringence in poly(vinyl cinnamate))

IT \*\*\*Holography\*\*\*  
(reversibility of photoinduced birefringence in poly(vinyl cinnamate) films in relation to)

IT Recording materials  
(optical, poly(vinyl cinnamate) films with reversible photoinduced birefringence for)

IT Birefringence  
(photoinduced, reversible, in poly(vinyl cinnamate) films)

IT 24968-99-8  
RL: USES (Uses)  
(photoinduced birefringence in films of, reversibility of)

L5 ANSWER 21 OF 21 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1981:613578 CAPLUS  
DN 95:213578  
ED Entered STN: 12 May 1984  
TI Study of space-time changes in electron concentration during the rapid \*\*\*rearrangement\*\*\* of the structure of the current layer magnetic field  
AU Dreiden, G. V.; Komissarova, I. I.; Markov, V. S.; Ostrovskaya, G. V.; Ostrovskii, Yu. I.; Filippov, V. N.; Frank, A. G.; Khodzhaev, A. E.; Shedova, E. N.  
CS Fiz.-Tekh. Inst. im. Ioffe, Leningrad, USSR  
SO Zhurnal Tekhnicheskoi Fiziki (1981), 51(9), 1850-7  
CODEN: ZTEFA3; ISSN: 0044-4642

DT Journal  
 LA Russian  
 CC 76-2 (Electric Phenomena)  
 Section cross-reference(s): 74  
 AB Cine- \*\*\*holog\*\*\* . set-up is described which allows to obtain 5  
 interferograms of an electron current layer with 60 intervals between the  
 exposures. \*\*\*Hologram\*\*\* diffraction efficiency for different  
 modifications of cine- \*\*\*holog\*\*\* . set-up was calcd. Two-dimensional  
 maps of electron concn. distribution for successive phases of the layer  
 development together with a correlation between concn. changes and a fast  
 structure \*\*\*rearrangement\*\*\* of a current layer magnetic field were  
 obtained.  
 ST plasma dynamics electron concn \*\*\*holog\*\*\* ; interferometry  
 \*\*\*holog\*\*\* plasma dynamics; magnetic field electron current plasma  
 IT Plasma  
 (dynamics of, space-time changes in electron concn. during arrangement  
 of current layer magnetic field, \*\*\*holog\*\*\* . interferometry of)  
 IT Magnetic field  
 (of electron current in plasma, \*\*\*rearrangement\*\*\* of, effect on  
 space-time changes of electron concn. in, \*\*\*holog\*\*\* .  
 interferometry of)  
 IT \*\*\*Holography\*\*\*  
 (of plasma dynamics)  
 IT Interferometry  
 ( \*\*\*holog\*\*\* ., of plasma dynamics, space-time changes in electron  
 concn. during \*\*\*rearrangement\*\*\* of current layer magnetic field  
 structure by)

=> d his

(FILE 'HOME' ENTERED AT 11:29:02 ON 16 MAR 2006)

FILE 'CAPLUS' ENTERED AT 11:29:07 ON 16 MAR 2006

L1 1755 S (FRIES OR PHOTOFRIES) (5A) (REARRANG?)  
 L2 47 S L1 AND (LASER OR PATTERN OR IMAGE OR IMAGING OR MASK OR PHOTO  
 L3 47 S L1 AND (LASER OR PATTERN OR IMAGE OR IMAGING OR MASK OR PHOTO  
 L4 1755 S (FRIES OR PHOTOFRIES OR "PHOTO-FRIES") (5A) (REARRANG?)  
 L5 21 S (HOLOGRA?)AND (REARRANG?)

=> l1 and patterning

L1 IS NOT A RECOGNIZED COMMAND

The previous command name entered was not recognized by the system.

For a list of commands available to you in the current file, enter

"HELP COMMANDS" at an arrow prompt (=>).

=> s l1 and patterning

37140 PATTERNING

17 PATTERNINGS

37151 PATTERNING

(PATTERNING OR PATTERNINGS)

L6 1 L1 AND PATTERNING

=> d all

L6 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1992:601920 CAPLUS

DN 117:201920

ED Entered STN: 15 Nov 1992

TI Water-soluble photosensitive compounds, photoresistant compositions  
 containing them, and \*\*\*patterning\*\*\* of such photoresists

IN Hayashi, Nobuaki; Ito, Masahito; Morishita, Hajime; Nonogaki, Saburo;  
 Odaka, Yoshiyuki; Miura, Seiji; Nishizawa, Shoko

PA Hitachi, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-038

ICS G03F007-008; H01J009-227; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04026849	A2	19920130	JP 1990-131283	19900523
PRAI	JP 1990-131283		19900523		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 04026849	ICM	G03F007-038
	ICS	G03F007-008; H01J009-227; H01L021-027
	IPCI	G03F0007-038 [ICM,5]; G03F0007-008 [ICS,5]; H01J0009-227 [ICS,5]; H01L0021-027 [ICS,5]

GI

/ Structure 5 in file .gra /

AB The title water-sol. photosensitive compds. (I) and (II) [Z = H, OH; M = Na, K, NH4] are obtained by condensing an acetophenone structure-possessing polymer with an arom. aldehyde possessing an azide group and an aliph. aldehyde (e.g. MeCHO, crotonaldehyde). The title photoresist compn. comprises the above water-sol. photosensitive compd. and a water-sol. polymer which reacts with the former to show reciprocity low failure. The title photoresist compn. coated on a substrate is patternwise exposed in the presence of O, and developed to produce a pattern in which the exposed areas produce a pattern smaller in area than the area of the openings in the photomask.

ST photoresist compn high sensitivity; black matrix CRT manuf; acetophenone polymer condensation product

IT Cathode-ray tubes  
(color, black matrix, manuf. of, photoresist compn. for)

IT Resists  
(photo-, contg. acetophenone polymer aldehyde condensation product)

IT 24979-70-2D, p-Hydroxystyrene homopolymer, acetylated, \*\*\*Fries\*\*\*  
\*\*\*rearranged\*\*\*, condensation product with 4-azidobenzaldehyde-12-sulfonic acid salt and acetaldehyde 25231-54-3, Acrylamide-diacetone acrylamide copolymer 25300-64-5D, Maleic acid-styrene copolymer, acetylation product, condensation product with sodium potassium or ammonium 4-azidobenzaldehyde-2-sulfonate and acetaldehyde or croton aldehyde 55305-94-7D, 4-Azidobenzaldehyde-2-sulfonic acid sodium salt, condensation product with acetylated styrene polymer  
RL: TEM (Technical or engineered material use); USES (Uses)  
(photoresist compn. contg.)

=> l1 and (data or storage)  
L1 IS NOT A RECOGNIZED COMMAND  
The previous command name entered was not recognized by the system.  
For a list of commands available to you in the current file, enter "HELP COMMANDS" at an arrow prompt (=>).

=> s l1 and (data or storage)  
2050654 DATA  
170 DATAS  
2050768 DATA  
(DATA OR DATAS)  
359169 STORAGE  
724 STORAGES  
359463 STORAGE  
(STORAGE OR STORAGES)  
L7 83 L1 AND (DATA OR STORAGE)

=> d all 1-83

L7 ANSWER 1 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2005:1344210 CAPLUS  
ED Entered STN: 28 Dec 2005  
TI Sulfonic acid-functionalized phenylene-bridged periodic mesoporous organosilicas as catalyst materials  
AU Rac, Bulcsu; Hegyes, Peter; Forgo, Peter; Molnar, Arpad  
CS Department of Organic Chemistry, University of Szeged, Szeged, Hung.

SO Applied Catalysis, A: General (2006), 299, 193-201  
 CODEN: ACAGE4; ISSN: 0926-860X  
 PB Elsevier B.V.  
 DT Journal  
 LA English  
 CC 22-4 (Physical Organic Chemistry)  
 Section cross-reference(s): 67

AB Three solid acids based on bridged periodic mesoporous organosilica structure (PMO) with a benzene ring as the rigid unit incorporated in the framework and functionalized with anchored sulfonic acid groups were synthesized. Samples were prep'd. by either sol-gel polymn. of 1,4-bis(triethoxysilyl)benzene (BTEB) or co-condensation of BTEB and 3-mercaptopropyltrimethoxysilane (MPTMS) in the presence of octadecyltrimethylammonium bromide surfactant. Phys. characterization \*\*\*data\*\*\* (X-ray powder diffraction, nitrogen adsorption and desorption, and NMR spectroscopy) and acid-base titrn. indicate the formation of ordered structure and successful functionalization. Catalytic properties were studied in both gas-phase and liq.-phase reactions. The catalytic performance of the PMO-based samples in the isopropylation of phenol in the gas-phase, particularly their stability, exceeds markedly those of functionalized mesoporous ordered materials (MCM-41, HMS and SBA-15). Selectivities in the \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of Ph acetate over the PMO-based catalysts differ significantly from that of the homogeneous reaction. The sample with benzenesulfonic acid surface functions exhibits higher activities and different selectivities in the dimerization of 2-phenylpropene and in the rearrangement-aromatization of ketoisophorone as compared to samples functionalized with propanesulfonic acid groups.

ST sulfonic acid functionalized phenylene bridged periodic mesoporous organosilicas catalyst

IT Aromatization  
 Dimerization  
 \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 Isopropylation  
 Surfactants  
 (XRD on sulfonic acid-functionalized phenylene-bridged periodic mesoporous organosilicas as catalyst materials)

IT Porous materials  
 (mesoporous; XRD on sulfonic acid-functionalized phenylene-bridged periodic mesoporous organosilicas as catalyst materials)

IT 7631-86-9D, Silica, benzenesulfonic acid functionalized and isopropylsulfonation functionalized 7790-94-5D, Chlorosulfonic acid, siliceous derivs.  
 RL: CAT (Catalyst use); CPS (Chemical process); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); FORM (Formation, nonpreparative); PROC (Process); USES (Uses)  
 (XRD on sulfonic acid-functionalized phenylene-bridged periodic mesoporous organosilicas as catalyst materials)

IT 6258-73-7, 4-Methyl-2,4-diphenyl-pent-2-ene 6362-80-7, 4-Methyl-2,4-diphenyl-pent-1-ene  
 RL: CPS (Chemical process); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); RCT (Reactant); FORM (Formation, nonpreparative); PROC (Process); RACT (Reactant or reagent)  
 (XRD on sulfonic acid-functionalized phenylene-bridged periodic mesoporous organosilicas as catalyst materials)

IT 67-63-0, Isopropyl alcohol 98-83-9, .alpha.-Methylstyrene 108-95-2, Phenol 122-79-2, Phenyl acetate 1125-21-9, Ketoisophorone  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)  
 (XRD on sulfonic acid-functionalized phenylene-bridged periodic mesoporous organosilicas as catalyst materials)

IT 3910-35-8, 1,1,3-Trimethyl-3-phenylindan 7479-28-9, 2,3,5-Trimethylhydroquinone diacetate 124743-97-1  
 RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)  
 (XRD on sulfonic acid-functionalized phenylene-bridged periodic mesoporous organosilicas as catalyst materials)

IT 112-02-7, Cetyltrimethylammonium chloride  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (XRD on sulfonic acid-functionalized phenylene-bridged periodic mesoporous organosilicas as catalyst materials)

RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L7 ANSWER 2 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:404814 CAPLUS

DN 144:201958

ED Entered STN: 12 May 2005

TI Photochemical transformations of p-(methacryloyloxy)-N-phenylimides and their polymers under the action of UV-light

AU Liudmyla, Gryshchuk; Lyudmila, Vretik; Vladimir, Syromyatnikov

CS Department of Macromolecular Chemistry, Faculty of Chemistry, Kyiv

National Taras Shevchenko University, Kiev, Ukraine

SO Molecular Crystals and Liquid Crystals (2005), 427, 439-449

CODEN: MCLCD8; ISSN: 1542-1406

PB Taylor & Francis, Inc.

DT Journal

LA English

CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35

AB Photochem. behavior under the influence of UV-light of p-(methacryloyloxy)-N-phenylimides and their polymers was investigated. The possibilities of Fries photorearrangement (FPR) as for monomers so for polymers were studied. The velocity of FPR for Ph methacrylate monomers depends weakly on the structure of imide substituents. But an introduction of substituents, esp. of arom. nature, in maleimide fragments increases the rate of FPR. For polymers with photoactive imide pendant groups both FPR and photocrosslinking reactions are possible. Correlations of velocities for crosslinkings and FPR reactions were found by the \*\*\*data\*\*\* of IR-spectroscopy. Photocrosslinking was found to be more rapidly process than FPR reaction.

ST Fries photorearrangement methacryloyloxy phenylimide

IT Rearrangement kinetics

(photochem. transformations of p-(methacryloyloxy)-N-phenylimides and their polymers under UV light)

IT Crosslinking

\*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*

(photochem.; photochem. transformations of p-(methacryloyloxy)-N-phenylimides and their polymers under UV light)

IT 117415-34-6 149193-35-1 161632-89-9 588709-56-2 588709-57-3  
588709-58-4

RL: RCT (Reactant); RACT (Reactant or reagent)  
(photochem. transformations of p-(methacryloyloxy)-N-phenylimides and  
their polymers under UV light)

IT 629165-23-7P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(photochem. transformations of p-(methacryloyloxy)-N-phenylimides and  
their polymers under UV light)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD

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(in Russian) 1979

L7 ANSWER 3 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2005:64294 CAPLUS  
DN 142:297658  
ED Entered STN: 25 Jan 2005  
TI Analyses of In-Cage Singlet Radical-Pair Motions from Irradiations of  
1-Naphthyl (R)-1-Phenylethyl Ether and 1-Naphthyl (R)-2-Phenylpropanoate  
in n-Alkanes  
AU Xu, Jinqi; Weiss, Richard G.  
CS Department of Chemistry, Georgetown University, Washington, DC,  
20057-1227, USA  
SO Journal of Organic Chemistry (2005), 70(4), 1243-1252  
CODEN: JOCEAH; ISSN: 0022-3263  
PB American Chemical Society  
DT Journal  
LA English  
CC 22-3 (Physical Organic Chemistry)  
OS CASREACT 142:297658  
AB The regio- and stereochemistries of photo-Claisen reactions of 1-naphthyl  
(R)-1-phenylethyl ether ((R)-2), in combination with photo-Fries and  
photo-Claisen-type reactions of 1-naphthyl (R)-2-phenylpropanoate ((R)-1),  
were studied in n-alkanes of different viscosities and at several temps.  
Analyses of the results provide detailed information about the in-cage  
motions of the singlet prochiral 1-naphthoxy/1-phenylethyl radical pairs  
(radical-pair B) that are formed directly from (R)-2 and indirectly from  
(R)-1 via decarbonylation of singlet chiral 1-naphthoxy/2-phenylpropanoyl  
radical pairs (radical-pair A). In hexane at 23 .degree.C, the  
photo-Claisen products from irradiations of (R)-2 retain up to 31%  
enantiomeric excess (ee), but the ees of the same photoproducts from (R)-1  
are .apprx.0%. This disparity is attributed to differences between the  
initial orientations of the constituent radicals of radical-pair B at the  
moment of their birth. The regio- and stereoselectivities reach plateau  
values as the solvent viscosity increases, indicating that the relations  
between the rates of radical-radical bond formation and either  
translational or tumbling motions within a solvent cage reach an  
asymptotic limit. Detailed analyses are presented of the various motions  
that are in competition within a solvent cage during the very short  
lifetimes of the radical pairs. The \*\*\*data\*\*\* , in toto, present  
interesting insights into how radical pairs move during short periods and  
over short distances when their solvent cages have walls of varying  
flexibility.

ST cage effect singlet radical pair motion photochem Fries reaction;  
phenylethyl naphthyl ether irradsn alkane solvent viscosity effect;  
phenylpropanoate naphthyl irradsn alkane solvent viscosity effect;  
photochem Claisen reaction cage singlet radical pair

IT CI (molecular orbital method)  
(CIS; analyses of in-cage singlet radical-pair motions from  
irradiations of 1-naphthyl (R)-1-phenylethyl ether and 1-naphthyl  
(R)-2-phenylpropanoate in n-alkanes)

IT Molecular structure  
(OPTIMIZED; analyses of in-cage singlet radical-pair motions from

irradiations of 1-naphthyl (R)-1-phenylethyl ether and 1-naphthyl (R)-2-phenylpropanoate in n-alkanes)

IT Hartree-Fock method  
(RHF; analyses of in-cage singlet radical-pair motions from irradiations of 1-naphthyl (R)-1-phenylethyl ether and 1-naphthyl (R)-2-phenylpropanoate in n-alkanes)

IT Cage effect  
Conformation  
Photolysis  
Racemization  
Recombination reaction  
Regiochemistry  
Rotamers  
Stereochemistry  
(analyses of in-cage singlet radical-pair motions from irradiations of 1-naphthyl (R)-1-phenylethyl ether and 1-naphthyl (R)-2-phenylpropanoate in n-alkanes)

IT Molecular dynamics  
(caged singlet radical pair; analyses of in-cage singlet radical-pair motions from irradiations of 1-naphthyl (R)-1-phenylethyl ether and 1-naphthyl (R)-2-phenylpropanoate in n-alkanes)

IT Bond formation  
(carbon-carbon; analyses of in-cage singlet radical-pair motions from irradiations of 1-naphthyl (R)-1-phenylethyl ether and 1-naphthyl (R)-2-phenylpropanoate in n-alkanes)

IT Ground state  
(conformation; analyses of in-cage singlet radical-pair motions from irradiations of 1-naphthyl (R)-1-phenylethyl ether and 1-naphthyl (R)-2-phenylpropanoate in n-alkanes)

IT Claisen rearrangement  
Decarbonylation  
\*\*\*Fries\*\*\*      \*\*\*rearrangement\*\*\*  
(photochem.; analyses of in-cage singlet radical-pair motions from irradiations of 1-naphthyl (R)-1-phenylethyl ether and 1-naphthyl (R)-2-phenylpropanoate in n-alkanes)

IT Molecular orientation  
(reaction stereochem. and nascent singlet radical pairs; analyses of in-cage singlet radical-pair motions from irradiations of 1-naphthyl (R)-1-phenylethyl ether and 1-naphthyl (R)-2-phenylpropanoate in n-alkanes)

IT Radicals, reactions  
RL: CPS (Chemical process); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); FORM (Formation, nonpreparative); PROC (Process); RACT (Reactant or reagent)  
(singlet pairs; analyses of in-cage singlet radical-pair motions from irradiations of 1-naphthyl (R)-1-phenylethyl ether and 1-naphthyl (R)-2-phenylpropanoate in n-alkanes)

IT Alkanes, properties  
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)  
(solvent viscosity effects; analyses of in-cage singlet radical-pair motions from irradiations of 1-naphthyl (R)-1-phenylethyl ether and 1-naphthyl (R)-2-phenylpropanoate in n-alkanes)

IT Claisen rearrangement  
(stereoselective; analyses of in-cage singlet radical-pair motions from irradiations of 1-naphthyl (R)-1-phenylethyl ether and 1-naphthyl (R)-2-phenylpropanoate in n-alkanes)

IT Solvent effect  
(viscosity; analyses of in-cage singlet radical-pair motions from irradiations of 1-naphthyl (R)-1-phenylethyl ether and 1-naphthyl (R)-2-phenylpropanoate in n-alkanes)

IT 5789-35-5P  
RL: BYP (Byproduct); PREP (Preparation)  
(analyses of in-cage singlet radical-pair motions from irradiations of 1-naphthyl (R)-1-phenylethyl ether and 1-naphthyl (R)-2-phenylpropanoate in n-alkanes)

IT 171567-74-1  
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)  
(analyses of in-cage singlet radical-pair motions from irradiations of 1-naphthyl (R)-1-phenylethyl ether and 1-naphthyl (R)-2-phenylpropanoate in n-alkanes)



IT 847934-73-0P  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)  
 (analyses of in-cage singlet radical-pair motions from irradiations of 1-naphthyl (R)-1-phenylethyl ether and 1-naphthyl (R)-2-phenylpropanoate in n-alkanes)

IT 190189-36-7 251442-80-5  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)  
 (analyses of in-cage singlet radical-pair motions from irradiations of 1-naphthyl (R)-1-phenylethyl ether and 1-naphthyl (R)-2-phenylpropanoate in n-alkanes)

IT 100-41-4, formation (nonpreparative) 100-42-5, formation (nonpreparative) 4398-16-7 108055-11-4 251442-75-8 251442-77-0  
 RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)  
 (analyses of in-cage singlet radical-pair motions from irradiations of 1-naphthyl (R)-1-phenylethyl ether and 1-naphthyl (R)-2-phenylpropanoate in n-alkanes)

IT 847934-74-1P 847934-75-2P 847934-76-3P 847934-77-4P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (analyses of in-cage singlet radical-pair motions from irradiations of 1-naphthyl (R)-1-phenylethyl ether and 1-naphthyl (R)-2-phenylpropanoate in n-alkanes)

IT 90-15-3, 1-Naphthol 1445-91-6 7782-26-5, (R)-2-Phenylpropionic acid  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (analyses of in-cage singlet radical-pair motions from irradiations of 1-naphthyl (R)-1-phenylethyl ether and 1-naphthyl (R)-2-phenylpropanoate in n-alkanes)

IT 603-35-0, Triphenylphosphine, reactions 2446-83-5, Diisopropyl azodicarboxylate  
 RL: RGT (Reagent); RACT (Reactant or reagent)  
 (analyses of in-cage singlet radical-pair motions from irradiations of 1-naphthyl (R)-1-phenylethyl ether and 1-naphthyl (R)-2-phenylpropanoate in n-alkanes)

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L7 ANSWER 4 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2005:48561 CAPLUS  
 DN 142:219123  
 ED Entered STN: 20 Jan 2005  
 TI 4,6-Disubstituted 2,2-dimethylchromans structurally related to the KATP channel opener cromakalim: Design, synthesis, and effect on insulin release and vascular tone  
 AU Sebillé, Sophie; De Tullio, Pascal; Becker, Benedicte; Antoine, Marie-Helene; Boverie, Stephane; Pirotte, Bernard; Lebrun, Philippe  
 CS Natural and Synthetic Drugs Research Center, Department of Medicinal Chemistry, Université de Liege, Liege, B-4000, Belg.  
 SO Journal of Medicinal Chemistry (2005), 48(2), 614-621  
 CODEN: JMCMAR; ISSN: 0022-2623  
 PB American Chemical Society  
 DT Journal  
 LA English  
 CC 27-14 (Heterocyclic Compounds (One Hetero Atom))  
 Section cross-reference(s): 1  
 OS CASREACT 142:219123  
 GI

AB Five series (ureas, thioureas, carbamates, sulfonylureas, and amides) of 4,6-disubstituted-2,2-dimethylchromans, e.g., I, structurally related to cromakalim were prepd. and evaluated, as putative ATP-sensitive potassium channel activators, on rat pancreatic islets and rat aorta rings. The biol. \*\*\*data\*\*\* indicated that most compds. were, like the ref. mol. cromakalim, more active on the vascular smooth muscle tissue (myorelaxant effect on 30 mM KCl induced contractions of rat aorta rings) than on the pancreatic tissue (inhibition of 16.7 mM glucose induced insulin release from rat pancreatic islets). However, some drugs markedly inhibited insulin release and exhibited an activity equiv. or greater than that of diazoxide. A few compds. were also found to be more active on pancreatic .beta.-cells than on vascular smooth muscle cells. Last, one of the amides was selected in order to examine its mechanism of action on vascular smooth muscle cells. Pharmacol. results suggest that the compd. acted as a KATP channel opener. The \*\*\*data\*\*\* indicate that appropriate structural modifications can generate dimethylchromans with pharmacol. profiles different from that of cromakalim.

ST aminochromane electrophile addn; substituted aminochromane prepn ATP sensitive potassium channel activator

IT Secretion (process)  
(insulin; prepn., contractile activity, insulin secretion affinity, and potassium channel opening activity of disubstituted dimethylchromans via amidation of dimethyl(dihydro)benzopyranols followed by hydrolysis, and addn. to electrophiles)

IT Addition reaction  
Electrophiles  
Potassium channel openers  
(prepn., contractile activity, insulin secretion affinity, and potassium channel opening activity of disubstituted dimethylchromans via amidation of dimethyl(dihydro)benzopyranols followed by hydrolysis, and addn. to electrophiles)

IT 67-64-1, Acetone, reactions 106-48-9, 4-Chlorophenol  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(prepn. of chloro(dimethyl)dihydrobenzopyranol via acetylation of chlorophenol followed by \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*, cyclization with acetone, and redn. in the prepn. of disubstituted dimethylchromans)

IT 876-27-7P, 4-Chlorophenyl acetate 1450-74-4P 80055-85-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. of chloro(dimethyl)dihydrobenzopyranol via acetylation of chlorophenol followed by \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*, cyclization with acetone, and redn. in the prepn. of disubstituted dimethylchromans)

IT 226922-87-8P 226922-88-9P 841268-99-3P  
RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent)  
(prepn., contractile activity, insulin secretion affinity, and potassium channel opening activity of disubstituted dimethylchromans via amidation of dimethyl(dihydro)benzopyranols followed by hydrolysis, and addn. to electrophiles)

IT 841268-47-1P 841268-49-3P 841268-51-7P 841268-53-9P 841268-55-1P  
841268-57-3P 841268-59-5P 841268-62-0P 841268-64-2P 841268-66-4P  
841268-68-6P 841268-70-0P 841268-72-2P 841268-74-4P 841268-76-6P  
841268-79-9P 841268-81-3P 841268-84-6P 841268-86-8P 841268-88-0P  
841268-90-4P 841268-92-6P 841268-94-8P 841268-96-0P  
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)  
(prepn., contractile activity, insulin secretion affinity, and potassium channel opening activity of disubstituted dimethylchromans via amidation of dimethyl(dihydro)benzopyranols followed by hydrolysis, and addn. to electrophiles)

IT 109-90-0, Ethyl isocyanate 541-41-3, Ethyl chloroformate 542-85-8, Ethyl isothiocyanate 622-78-6, Benzyl isothiocyanate 1795-48-8, Isopropylisocyanate 2253-73-8, Isopropyl isothiocyanate 2845-62-7, Phenylsulfonyl isocyanate 3173-56-6, Benzylisocyanate 4083-64-1, 4-Methylphenylsulfonyl isocyanate 5769-15-3, 4-Chlorophenylsulfonyl isocyanate 131815-91-3 132686-72-7  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(prepn., contractile activity, insulin secretion affinity, and potassium channel opening activity of disubstituted dimethylchromans

via amidation of dimethyl(dihydro)benzopyranols followed by hydrolysis, and addn. to electrophiles)

IT 70505-61-2P 226922-92-5P 226922-93-6P 841269-03-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn., contractile activity, insulin secretion affinity, and potassium channel opening activity of disubstituted dimethylchromans via amidation of dimethyl(dihydro)benzopyranols followed by hydrolysis, and addn. to electrophiles)

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L7 ANSWER 5 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:597654 CAPLUS

DN 142:317495

ED Entered STN: 27 Jul 2004

TI Photochemical reactions and photophysical processes: Comparison of photochemical degradation of different types of polycarbonates

AU Hrdlovic, Pavol

CS Institute of Polymers, Slovak Academy of Sciences, Bratislava, 842 36, Slovakia

SO Polymer News (2004), 29(6), 187-193  
 CODEN: PLYNBU; ISSN: 0032-3918

PB Taylor & Francis, Inc.

DT Journal

LA English

CC 37-6 (Plastics Manufacture and Processing)

AB \*\*\*Data\*\*\* of comparison on photodegrdn. of bisphenol-A polycarbonate and trimethylcyclohexane-polycarbonate are discussed. Polymer photooxidn. is the result of the combined action of light and oxygen. The decompn. of hydroperoxides either by photolysis or by thermolysis involves the homolysis of the O-O bond, and leads to the formation of hydroxyl radical and of an alkoxy macroradical that may react in several ways.

ST photochem reaction photophys process degrdn polycarbonate

IT Polycarbonates, processes  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)  
 (comparative study of photochem. degrdn. mechanisms of different types of polycarbonates)

IT Polymer degradation  
 (oxidative, photochem.; comparative study of photochem. degrdn. mechanisms of different types of polycarbonates)

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 (photochem.; comparative study of photochem. degrdn. mechanisms of different types of polycarbonates)

IT 25037-45-0, Bisphenol A-carbonic acid copolymer 138005-52-4,  
 1,1-Bis(4-hydroxyphenyl)-3,3,5-trimethylcyclohexane-carbonic acid

copolymer  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)  
 (assumed monomers; comparative study of photochem. degrdn. mechanisms of different types of polycarbonates)

IT 24936-68-3, Bisphenol A-carbonic acid copolymer, sru, processes  
 129510-27-6, 1,1-Bis(4-hydroxyphenyl)-3,3,5-trimethylcyclohexane-carbonic acid copolymer, sru  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)  
 (comparative study of photochem. degrdn. mechanisms of different types of polycarbonates)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
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L7 ANSWER 6 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2004:356199 CAPLUS  
 DN 141:243448  
 ED Entered STN: 03 May 2004  
 TI Synthesis of 5-(4'-aroyl)-aryloxymethyl-4H-(1,2,4)-triazolin-3-thiol and their biological activity  
 AU Sudha, B. S.; Shashikanth, S.; Khanum, Shaukath Ara  
 CS Yuvaraja's College, University of Mysore, Mysore, India  
 SO Heterocyclic Communications (2004), 10(1), 85-88  
 CODEN: HCOMEX; ISSN: 0793-0283  
 PB Freund Publishing House Ltd.  
 DT Journal  
 LA English  
 CC 28-10 (Heterocyclic Compounds (More Than One Hetero Atom))  
 Section cross-reference(s): 1, 10  
 OS CASREACT 141:243448  
 GI

/ Structure 7 in file .gra /

AB 5-((4'-Aroyl)-aryloxymethyl-4H-1,2,4)triazolin-3-thiols I (R = H, Me; R1 = H, Cl) were synthesized by using substituted Ph benzoates as the starting material. Ph benzoates on \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* gave p-hydroxybenzophenones which on treatment with Et bromoacetate in presence of anhyd. potassium carbonate and dry acetone gave corresponding benzoyl phenyloxy esters in excellent yield. Esters were refluxed with thiosemicarbazide in presence of acetic anhydride gave cyclized title compds. I. Supports for the structures of the synthesized compds. were provided by their elemental anal. and spectral \*\*\*data\*\*\*. The newly synthesized compds. I were screened for antibacterial and antifungal activities.

ST benzoate \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*; hydroxybenzophenone prepn reaction bromoacetate; benzoyl phenyloxy ester prepn cyclocondensation thiosemicarbazide; aroylaryloxymethyl triazolinethiol prepn antibacterial antifungal activity

IT Esters, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (arom., benzoates; prepn. and antibacterial and antifungal activities of aroylaryloxymethyltriazolinthiols)

IT Ketones, preparation  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (arom.; prepn. and antibacterial and antifungal activities of aroylaryloxymethyltriazolinthiols)

IT Infection  
 (bacterial; prepn. and antibacterial and antifungal activities of aroylaryloxymethyltriazolinthiols)

IT Antibacterial agents  
 Fungicides  
 Mycosis  
 (prepn. and antibacterial and antifungal activities of

aroylaryloxymethyltriazolinthiols)  
IT 750648-90-9P 750648-91-0P 750648-92-1P 750648-93-2P  
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU  
(Therapeutic use); BIOL (Biological study); PREP (Preparation); USES  
(Uses)  
(prepn. and antibacterial and antifungal activities of  
aroylaryloxymethyltriazolinthiols)  
IT 79-19-6, Thiosemicarbazide 93-99-2 105-36-2, Ethyl bromoacetate  
617-02-7 6280-51-9 41998-17-8  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(prepn. and antibacterial and antifungal activities of  
aroylaryloxymethyltriazolinthiols)  
IT 1137-42-4P 5326-42-1P 6280-55-3P 51848-56-7P 61002-52-6P  
667891-41-0P 670221-37-1P 670221-38-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and antibacterial and antifungal activities of  
aroylaryloxymethyltriazolinthiols)

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L7 ANSWER 7 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:25732 CAPLUS

DN 140:305685

ED Entered STN: 13 Jan 2004

TI As to the reasons of the high activity of a commercial pentasil-type  
zeolite in the vapor-phase \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*

AU Borzatta, Valerio; Busca, Guido; Poluzzi, Elisa; Rossetti, Valentina;  
Trombetta, Marcella; Vaccari, Angelo

CS Endura SpA, Bologna, 40121, Italy

SO Applied Catalysis, A: General (2004), 257(1), 85-95

CODEN: ACAGE4; ISSN: 0926-860X

PB Elsevier Science B.V.

DT Journal; General Review

LA English

CC 45-0 (Industrial Organic Chemicals, Leather, Fats, and Waxes)

AB A review. A new environment-friendly synthesis of  
hydroxyphenylalkylketones was developed operating in vapor phase and using  
a com. pentasil-type zeolite, obtaining both high conversion values of the  
phenylacetate feed and high selectivity in the ortho-hydroxyacetophenone,  
together with a low amt. of byproducts. Furthermore, good catalytic  
performances were also obtained with longer chain esters. The peculiar  
features of this catalyst-either as such or in the presence of finely  
ground Al2O3 as binder-were investigated by FT-IR spectroscopy, as such or  
using a non-hindered (acetonitrile) and a hindered nitrile (pivalonitrile)  
as probes, with a view to explaining its unusual behavior. These

\*\*\*data\*\*\* suggest that the catalyst is a modified HZSM5 zeolite,  
probably externally covered by a layer of terminal silanols, with lowering  
of acidity and formation of small amts. of defects represented by enlarged  
channels. The alumina binder does not hinder the access to cavities, but  
seems to limit the no. of defects or their availability.

ST review zeolite catalyst \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* catalysts

(high activity of a com. pentasil-type zeolite in the vapor-phase

\*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* )

IT Pentasil-type zeolites  
Zeolite HZSM-5  
RL: CAT (Catalyst use); USES (Uses)  
(high activity of a com. pentasil-type zeolite in the vapor-phase  
\*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* )  
IT 122-79-2, Phenyl acetate  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(high activity of a com. pentasil-type zeolite in the vapor-phase  
\*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* )  
IT 99-93-4P, 4-Hydroxyphenyl methyl ketone 118-93-4P, 2-Hydroxyphenyl  
methyl ketone  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(high activity of a com. pentasil-type zeolite in the vapor-phase  
\*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* )

RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE

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L7 ANSWER 8 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:416465 CAPLUS

DN 139:381402

ED Entered STN: 01 Jun 2003

TI Intramolecular weak hydrogen bonds in substituted 4-arylthiazoles

AU Sanchez-Viesca, F.; Berros, Martha; Gomez, Ma. R.

CS Fac. of Chem., Grad. Div., National Autonomous Univ. of Mexico, Mexico  
City, 04510, Mex.

SO Heterocyclic Communications (2003), 9(2), 165-170

CODEN: HCOMEX; ISSN: 0793-0283

PB Freund Publishing House Ltd.

DT Journal

LA English

CC 28-7 (Heterocyclic Compounds (More Than One Hetero Atom))

Section cross-reference(s): 22

OS CASREACT 139:381402

AB We have synthesized new polysubstituted 4-arylthiazoles with a  
substitution pattern able to form intramol. weak hydrogen bonds as  
secondary structure, and besides, displaying in the arom. region of their  
1H-NMR spectra an ABX spin system and only one singlet (the thiazolic  
proton), thus permitting us to make doubtless assignments. These results  
confirmed previous assignments made by us in other thiazole-derivs. prepd.  
by the first time. The spectroscopic \*\*\*data\*\*\* (IR, 1H-NMR and MS)  
of these thiazoles, as well as of the required intermediates, are  
discussed.

ST substituted arylthiazole prepn intramol weak hydrogen bonding

IT Cycloaddition reaction

\*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*

(in prepn. of substituted arylthiazoles having intramol. weak hydrogen

bonds)

IT Hydrogen bond  
(intramol.; prepn. and spectroscopic studies of substituted arylthiazoles having intramol. weak hydrogen bonds)

IT 490-78-8, Quinacetophenone 1205-91-0 7402-28-0  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(Fries transposition of; prepn. and spectroscopic studies of substituted arylthiazoles having intramol. weak hydrogen bonds)

IT 62-55-5, Thioacetamide 62-56-6, Thiourea, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(cycloaddn. of; prepn. and spectroscopic studies of substituted arylthiazoles having intramol. weak hydrogen bonds)

IT 21222-04-8P 25015-91-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(cycloaddn. with thioacetamide; prepn. and spectroscopic studies of substituted arylthiazoles having intramol. weak hydrogen bonds)

IT 1204-21-3P, .alpha.-Bromo-2,5-dimethoxyacetophenone  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(cycloaddn. with thiourea or thioacetamide; prepn. and spectroscopic studies of substituted arylthiazoles having intramol. weak hydrogen bonds)

IT 938-46-5P 1201-38-3P 74605-12-2P 459124-90-4P 459124-91-5P  
459124-92-6P 459124-93-7P 459124-94-8P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and spectroscopic studies of substituted arylthiazoles having intramol. weak hydrogen bonds)

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD  
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L7 ANSWER 9 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:382560 CAPLUS

DN 139:283202

ED Entered STN: 20 May 2003

TI Facile synthesis and photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of  
2-benzoyl-4-benzoyloxyphenol leading to dibenzoyldihydroxybenzene  
derivatives

AU Park, Kwanghee Koh; Lee, Hyun Joo; Kim, Eun Hee; Kang, Sung Kwon  
CS Department of Chemistry, Chungnam National University, Taejon, 305-764, S.  
Korea

SO Journal of Photochemistry and Photobiology, A: Chemistry (2003), 159(1),  
17-21

CODEN: JPPCEJ; ISSN: 1010-6030

PB Elsevier Science B.V.

DT Journal

LA English

CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

Section cross-reference(s): 22

AB The authors prepd. 2-benzoyl-4-benzoyloxyphenol 1 in 93% yield by reacting  
1,4-dimethoxybenzene with benzoyl chloride in the presence of aluminum  
chloride. Irradn. of 1 with 254 mercury lamps provided  
2,5-dibenzoyl-1,4-dihydroxybenzene 4, 2,3-dibenzoyl-1,4-dihydroxybenzene



5, and 2-benzoyl-1,4-dihydroxybenzene 6 with 19, 48, and 17% yields, resp. The structure of the compd. 4 was confirmed by single crystal x-ray anal. Photo-Fries reaction of 1,4-dibenzoyloxybenzene 7 was also re-examd. The reported mp and <sup>1</sup>H NMR \*\*\*data\*\*\* of 1 and 4 were cor.

ST synthesis benzoylbenzoyloxyphenol photochem \*\*\*Fries\*\*\*  
 \*\*\*rearrangement\*\*\* photoproduct dibenzoyldihydroxybenzene deriv

IT Solvent polarity effect  
 (photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of  
 benzoylbenzoyloxyphenol to dibenzoyldihydroxybenzene derivs.)

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 (photochem.; synthesis of benzoylbenzoyloxyphenol and its photo-  
 \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* to dibenzoyldihydroxybenzene  
 derivs.)

IT 14210-97-0, 1,4-Dibenzoyloxybenzene  
 RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)  
 (comparison compd.; photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of  
 benzoylbenzoyloxyphenol to dibenzoyldihydroxybenzene derivs.)

IT 2050-37-5P, 2-Benzoyl-1,4-dihydroxybenzene 97971-75-0P 111936-95-9P,  
 2,3-Dibenzoyl-1,4-dihydroxybenzene  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical  
 process); PRP (Properties); SPN (Synthetic preparation); PREP  
 (Preparation); PROC (Process)  
 (photoproduct; synthesis of benzoylbenzoyloxyphenol and its photo-  
 \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* to dibenzoyldihydroxybenzene  
 derivs.)

IT 7446-70-0, Aluminum trichloride, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (reaction of dimethoxybenzene with benzoyl chloride in presence of  
 aluminum chloride)

IT 98-88-4, Benzoyl chloride 150-78-7, 1,4-Dimethoxybenzene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of dimethoxybenzene with benzoyl chloride in presence of  
 aluminum chloride)

IT 67-56-1, Methanol, properties 71-43-2, Benzene, properties  
 RL: PRP (Properties)  
 (solvent effect of; photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of  
 benzoylbenzoyloxyphenol to dibenzoyldihydroxybenzene derivs.)

IT 97971-74-9P  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical  
 process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation);  
 PREP (Preparation); PROC (Process); RACT (Reactant or reagent)  
 (synthesis of benzoylbenzoyloxyphenol and its photo- \*\*\*Fries\*\*\*  
 \*\*\*rearrangement\*\*\* to dibenzoyldihydroxybenzene derivs.)

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 ed 1991, P175

ED Entered STN: 21 Mar 2003  
TI Method and apparatus for in situ determination of molten polymer compositions using electronic absorption spectroscopy  
IN Potyrailo, Radislav Alexandrovich; McCloskey, Patrick Joseph; Day, James  
PA General Electric Co., USA  
SO U.S. Pat. Appl. Publ., 20 pp.  
CODEN: USXXCO  
DT Patent  
LA English  
IC ICM G01J003-42  
INCL 356326000  
CC 36-4 (Physical Properties of Synthetic High Polymers)  
Section cross-reference(s): 35

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003053050	A1	20030320	US 2001-682365	20010824
	US 6809817	B2	20041026		
PRAI	US 2001-682365		20010824		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2003053050	ICM	G01J003-42
	INCL	356326000
	IPCI	G01J0003-42 [ICM,7]
	IPCR	G01J0003-28 [I,A]; G01J0003-28 [I,C]; G01J0003-42 [I,A]; G01J0003-42 [I,C]
	NCL	356/326.000
	ECLA	G01J003/28; G01J003/42

AB An app. for in situ monitoring of molten polymer (e.g., polycarbonate) and/or oligomer compn. comprises: a light source; a fiber optic transmission probe, wherein the probe transmits at least one substantially monochromatic radiation from the light source to irradiate a sample comprising at least one polymer and/or oligomer and collects light transmitted from the irradiated sample; a spectrophotometer, wherein the spectrophotometer monitors radiation comprising UV/visible light absorbed by the irradiated sample; and a \*\*\*data\*\*\* anal. system, wherein the \*\*\*data\*\*\* anal. system correlates absorbance to at least one predetd. reaction component. The invention is useful in monitoring of polymer prepn. by melt polymn. The methods and app. of the invention are suitable for monitoring of Fries products in reactions ranging in size from small scale combinatorial formats to prodn. scale reactors. Also included in methods of the invention are univariate and multivariate anal. for prediction of linear Fries, branched Fries and uncapped phenolic end-groups in unknowns.

ST UV visible spectroscopy molten polymer monitoring

IT Polycarbonates, analysis

RL: ANT (Analyte); ANST (Analytical study)

( \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* products; method and app. for in situ detn. of molten polymer compns. using electronic absorption spectroscopy)

IT Process control

UV and visible spectroscopy

(method and app. for in situ detn. of molten polymer compns. using electronic absorption spectroscopy)

IT Polycarbonates, analysis

RL: ANT (Analyte); ANST (Analytical study)

(method and app. for in situ detn. of molten polymer compns. using electronic absorption spectroscopy)

IT 24936-68-3, Bisphenol A-diphenyl carbonate copolymer, sru, analysis

25929-04-8, Bisphenol A-diphenyl carbonate copolymer

RL: ANT (Analyte); ANST (Analytical study)

(method and app. for in situ detn. of molten polymer compns. using electronic absorption spectroscopy)

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L7 ANSWER 11 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2003:45589 CAPLUS  
 DN 138:304664  
 ED Entered STN: 21 Jan 2003  
 TI Thermal and photochemical behavior of a polyurethane with aromatic structure  
 AU Rosu, Liliana; Cascaval, Constantin N.; Ciobanu, Constantin; Rosu, Dan  
 CS Inst. de Chim. Macromol. "Petru Poni", Iasi, Rom.  
 SO Materiale Plastice (Bucharest, Romania) (2002), 39(3), 183-188  
 CODEN: MPLAAM; ISSN: 0025-5289  
 PB SYSCOM 18 SRL  
 DT Journal  
 LA Romanian  
 CC 35-8 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 39  
 AB Polyurethane synthesized by melt condensation of adipic acid, ethylene glycol and diethylene glycol with 4,4'-diphenylmethanediisocyanate shows a complex thermal degrdn. mechanism, which is accompanied by both the depolymn. reaction and the random scissions of the macromol. chains. The thermal decompn. of polyurethane starts at temps. higher than 200.degree.C and takes place in four successive stages. The UV radiations provoke important modifications in IR spectrum of polyurethane, in a direct relationship with the exposure time. \*\*\*Data\*\*\* obtained by IR spectroscopy show the presence of photo- \*\*\*Fries\*\*\*  
 \*\*\*rearrangement\*\*\*. The physico-mech. properties of the irradiated polyurethane increase with increasing of the irradiation time up to 2 h, and then decrease.  
 ST polyurethane photochem thermal degrdn depolymn rearrangement  
 IT Depolymerization  
 (in thermal and photochem. degrdn. of polyurethane)  
 IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 (photochem.; in thermal and photochem. degrdn. of polyurethane)  
 IT Polymer degradation  
 (photochem.; thermal and photochem. degrdn. of polyurethane)  
 IT Polymer degradation  
 (thermal; thermal and photochem. degrdn. of polyurethane)  
 IT 38831-04-8, Adipic acid-ethylene glycol-diethylene glycol-4,4'-MDI copolymer  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)  
 (thermal and photochem. degrdn. of polyurethane)

L7 ANSWER 12 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2002:550661 CAPLUS  
 DN 137:270308  
 ED Entered STN: 25 Jul 2002  
 TI Electron transfer versus proton transfer in excited states of bichromophoric aniline/olefin systems  
 AU Benali, Otman; Miranda, Miguel A.; Tormos, Rosa  
 CS Departamento de Quimica/Instituto de Tecnologia Quimica UPV-CSIC, Universidad Politecnica de Valencia, Valencia, 46071, Spain  
 SO European Journal of Organic Chemistry (2002), (14), 2317-2322

CODEN: EJOCFK; ISSN: 1434-193X  
PB Wiley-VCH Verlag GmbH  
DT Journal  
LA English  
CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 22  
AB Photolysis of 2-allylaniline (1a) and trans-2-cinnamylaniline (2a)  
produced mainly the five- or the six-membered ring products 3a or 9a,  
resp. Compd. 1b the N-acetyl deriv. of 1a, preferentially underwent  
photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of the anilide moiety, while  
- in contrast - the analogous compd. 2b, derived from 2a, displayed  
competition between photocyclization and double-bond isomerization. The  
latter process, characteristic of the styrene chromophore, largely  
predominated in the case of 2c, the N-trifluoroacetyl deriv. of 2a, while  
the allyl analog 1c was essentially unreactive. The photochem. behavior  
of the cis-cinnamyl compds. 7a and 7b was analogous to that of their trans  
isomers 2a and 2b, although double bond isomerization occurred to a  
smaller extent. Thus, the introduction of electron-withdrawing acyl  
groups decreased photocyclisation. The nature of the excited states  
involved in the photochem. of 1a-c, 2a-c and 7a and 7b was studied by  
fluorescence measurements. The most remarkable observation was the  
formation of intramol. charge-transfer exciplexes in the cases of 1a, 2a,  
2b, 7a and 7b. The exciplex bands of the cinnamyl compds. 2a, 2b, 7a and  
7b in acetonitrile were considerably red-shifted (maxima at ca. 500 nm).  
A satisfactory correlation of the photochem. and photophys. \*\*\*data\*\*\*  
could be achieved by considering that photocyclization took place when  
clear exciplex emission was obsd. The above \*\*\*data\*\*\* strongly  
supported the involvement of an excited state electron-transfer mechanism  
in the photocyclization of aniline/olefin bichromophoric systems.  
ST electron transfer proton transfer excited bichromophoric aniline olefin  
system; photoinduced electron transfer proton transfer allylaniline  
cinnamoylaniline deriv; photolysis allylaniline cinnamoylaniline deriv  
photocyclization intramol exciplex  
IT Isomerization  
(cis-trans, photochem.; mechanism of photochem. reactions of  
allylaniline and cinnamylaniline and their derivs.)  
IT Electron transfer  
(intramol., photochem.; formation of intramol. charge-transfer  
exciplexes in photolysis of allylaniline and cinnamylaniline and their  
derivs.)  
IT Exciplex  
(intramol.; mechanism of photochem. reactions of allylaniline and  
cinnamylaniline and their derivs.)  
IT Fluorescence  
Photolysis  
Substituent effects  
(mechanism of photochem. reactions of allylaniline and cinnamylaniline  
and their derivs.)  
IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
Protonation  
(photochem.; mechanism of photochem. reactions of allylaniline and  
cinnamylaniline and their derivs.)  
IT Cyclization  
(photocyclization; mechanism of photochem. reactions of allylaniline  
and cinnamylaniline and their derivs.)  
IT 32704-22-6, 2-Allylaniline 68267-69-6 463932-05-0,  
trans-2-Cinnamylaniline  
RL: CPS (Chemical process); PEP (Physical, engineering or chemical  
process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant  
or reagent)  
(mechanism of photochem. reactions of allylaniline and cinnamylaniline  
and their derivs.)  
IT 463932-04-9P 463932-06-1P, trans-2-Cinnamylacetanilide 463932-07-2P  
RL: CPS (Chemical process); PEP (Physical, engineering or chemical  
process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation);  
PREP (Preparation); PROC (Process); RACT (Reactant or reagent)  
(mechanism of photochem. reactions of allylaniline and cinnamylaniline  
and their derivs.)  
IT 95-20-5P 6872-06-6P 463932-08-3P, 3-Allyl-2-aminoacetophenone  
463932-09-4P, 3-Allyl-4-aminoacetophenone  
RL: CPS (Chemical process); PEP (Physical, engineering or chemical

process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)  
 (photoproduct; mechanism of photochem. reactions of allylaniline and its derivs.)

IT 463932-10-7P, cis-2-Cinnamylaniline 463932-11-8P, cis-2-Cinnamylacetanilide 463932-12-9P  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)  
 (photoproduct; mechanism of photochem. reactions of cinnamylaniline and its derivs.)

IT 612-96-4P 24005-23-0P 164398-52-1P 463932-13-0P  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)  
 (photoproduct; mechanism of photochem. reactions of cinnamylaniline and its derivs.)

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L7 ANSWER 13 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2002:9244 CAPLUS  
 DN 136:238889  
 ED Entered STN: 04 Jan 2002  
 TI Extracting fundamental photochemical and photophysical information from photorearrangements of aryl phenylacrylates and aryl benzyl ethers in media comprised of polyolefinic films  
 AU Gu, Weiqiang; Weiss, Richard G.  
 CS Department of Chemistry, Georgetown University, Washington, DC, 20057-1227, USA  
 SO Journal of Photochemistry and Photobiology, C: Photochemistry Reviews (2001), 2(2), 117-137  
 CODEN: JPPCAF; ISSN: 1389-5567  
 PB Elsevier Science B.V.  
 DT Journal; General Review  
 LA English  
 CC 74-0 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 AB A review is presented of the use of photo- \*\*\*Fries\*\*\*  
 \*\*\*rearrangements\*\*\* of aryl esters and photo-Claisen rearrangements of

aryl ethers to probe the microenvironments of polyolefinic media and of the use of polyolefinic media to increase the selectivity of the photoreactions. Related photophys. \*\*\*data\*\*\* and results from photoreactions of the same probe mols. in "model" isotropic media are employed in the analyses. For the most part, the focus is on studies performed by the authors. Factors assocd. with the directing influences of the "reaction cages" of the polymers on singlet radical pair intermediates in these reactions are discussed. They include (1) small differences between the trajectory of approach of phenylacyl and benzylic radicals when bonding to their aryloxy radical partners in a cage and (2) the intrinsic reactivity of the aryloxy radicals. It is shown that the interplay between the polymeric hosts and their guests is complex, involving structural and dynamic factors that can be "tuned" to lead to very selective photochem. transformations. Information about both the mechanisms of transformations of the guests and the micromorphol. of the polymer hosts is revealed and dissected.

ST review Fries photorearrangement aryl ester polyolefinic film photochem photophysics; Claisen photorearrangement aryl ether polyolefinic film photochem photophysics review

IT Ethers, reactions

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)

(arom.; extg. fundamental photochem. and photophys. information from photorearrangements of aryl phenylacylates and aryl benzyl ethers polyolefinic films media)

IT Claisen rearrangement

\*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*

(photochem.; extg. fundamental photochem. and photophys. information from photorearrangements of aryl phenylacylates and aryl benzyl ethers polyolefinic films media)

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L7 ANSWER 14 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2001:772897 CAPLUS  
 DN 136:118318  
 ED Entered STN: 25 Oct 2001  
 TI Dihydrofurocoumarinones-new useful intermediates for substituted and condensed furocoumarins  
 AU Traven, Valery F.  
 CS Dep. Org. Chem., D.I. Mendeleev Chem.-Technol. Inst., moscow, 125047, Russia  
 SO ARKIVOC [online computer file] (2000), 1(4), 523-550  
 CODEN: AKVCFI  
 URL: <http://www.arkat.org/arkat/journal/Issue4/ms0057/ms0057.pdf>  
 PB ARKAT Foundation  
 DT Journal; (online computer file)  
 LA English  
 CC 26-9 (Biomolecules and Their Synthetic Analogs)  
 Section cross-reference(s): 28

OS CASREACT 136:118318  
AB Survey of new synthetic paths to substituted and condensed furocoumarins, perspective compds. for photochemotherapy was given. These furocoumarin syntheses were based on the use of dihydrofurocoumarinones as convenient synthons. Both dihydrofuro[2,3-h]coumarin-9-ones and dihydrofuro[2,3-g]coumarin-6-ones became available via the unusual \*\*\*Fries\*\*\*  
\*\*\*rearrangement\*\*\* of 7-hydroxycoumarin chloroacetates. Substitution and keto-enol reactions of dihydrofurocoumarinones followed by aromatization of dihydrofuranone moiety are key steps of substituted and condense furo[2,3-h]- and furo[2,3-g]coumarins synthesis. The structures of new compds. were detd. by mass spectral, 1H NMR spectral and elemental anal. \*\*\*data\*\*\*  
ST dihydrofurocoumarinone prepn \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
hydroxycoumarin chloroacetate; furocoumarinone prepn \*\*\*Fries\*\*\*  
\*\*\*rearrangement\*\*\* hydroxycoumarin chloroacetate  
IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
(prepn. of dihydrofurocoumarinones, useful intermediates for substituted and condensed furocoumarins, via \*\*\*Fries\*\*\*  
\*\*\*rearrangement\*\*\* of 7-hydroxycoumarin chloroacetates)  
IT Furocoumarins  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of dihydrofurocoumarinones, useful intermediates for substituted and condensed furocoumarins, via \*\*\*Fries\*\*\*  
\*\*\*rearrangement\*\*\* of 7-hydroxycoumarin chloroacetates)  
IT 86-81-7 90-02-8, reactions 100-10-7 119-66-4 121-33-5 122-00-9  
148-90-3 459-57-4 461-94-9 552-89-6 555-16-8, reactions 653-37-2  
1122-91-4 2028-34-4 2028-74-2 2028-76-4 2028-84-4 2028-85-5  
4346-59-2 24564-52-1. 41888-23-7 77232-70-3 93353-47-0 97610-71-4  
105738-24-7 182115-37-3 182115-38-4 182115-39-5 195142-11-1  
195142-19-9 220359-83-1 250726-57-9 250726-60-4 374628-57-6  
391671-69-5 391671-70-8  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(prepn. of dihydrofurocoumarinones, useful intermediates for substituted and condensed furocoumarins, via \*\*\*Fries\*\*\*  
\*\*\*rearrangement\*\*\* of 7-hydroxycoumarin chloroacetates)  
IT 182115-42-0P 182115-52-2P 182115-53-3P 250726-61-5P 250726-62-6P  
250726-63-7P 296887-32-6P 324527-17-5P 374628-63-4P 374628-66-7P  
391671-52-6P 391671-53-7P 391671-55-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. of dihydrofurocoumarinones, useful intermediates for substituted and condensed furocoumarins, via \*\*\*Fries\*\*\*  
\*\*\*rearrangement\*\*\* of 7-hydroxycoumarin chloroacetates)  
IT 14159-13-8P 21251-10-5P 182115-43-1P 182115-44-2P 182115-56-6P  
182115-57-7P 195142-12-2P 195142-18-8P 206999-14-6P 206999-15-7P  
206999-16-8P 250726-64-8P 250726-65-9P 250726-66-0P 296887-27-9P  
296887-37-1P 296890-34-1P 296895-68-6P 298684-07-8P 298686-30-3P  
309282-77-7P 313704-94-8P 324527-15-3P 324527-18-6P 324527-19-7P  
324527-20-0P 324527-21-1P 327043-30-1P 327043-33-4P 370584-36-4P  
374628-49-6P 374628-54-3P 374628-58-7P 374628-64-5P 374628-65-6P  
374628-67-8P 374628-68-9P 391671-54-8P 391671-56-0P 391671-57-1P  
391671-58-2P 391671-61-7P 391671-62-8P 391671-63-9P 391671-64-0P  
391671-65-1P 391671-66-2P 391671-67-3P 391671-68-4P 722456-96-4P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of dihydrofurocoumarinones, useful intermediates for substituted and condensed furocoumarins, via \*\*\*Fries\*\*\*  
\*\*\*rearrangement\*\*\* of 7-hydroxycoumarin chloroacetates)  
L7 ANSWER 15 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2001:127742 CAPLUS  
DN 135:11948  
ED Entered STN: 21 Feb 2001  
TI Conformational control of photoinduced decarboxylation of simple aryl esters. Enhancement by templating effects in polyethylene films  
AU Gu, W.; Abdallah, D. J.; Weiss, R. G.  
CS Department of Chemistry, Georgetown University, Washington, DC, 20057-1227, USA  
SO Journal of Photochemistry and Photobiology, A: Chemistry (2001), 139(1), 79-87  
CODEN: JPPCEJ; ISSN: 1010-6030  
PB Elsevier Science S.A.  
DT Journal



LA English  
 CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 22  
 AB The photochem. of Ph and 1-naphthyl esters has been investigated in solns. and in polyethylene films. Enhancement of photodecarboxylation at the expense of the 'normal' photo-Fries processes when the irradiations are conducted in polyethylene films at subambient temps. is attributed to a 'templating' effect imposed by the large solute mols. on the polymer chains that constitute their reaction cavities. Evidence for the conformation of the esters that promotes photodecarboxylation comes from quantum chem. calcs., single-crystal x-ray analyses, and addnl. interpretation of \*\*\*data\*\*\* in the literature.  
 ST coformation control photoinduced decarboxylation aryl ester; phenylacetate naphthyl phenyl ester conformation photodecarboxylation photochem  
 \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* ; photochem Ph naphthyl ester soln polyethylene film  
 IT Conformation  
 Crystal structure  
 (conformational control of photochem. reaction routes of Ph and naphthyl esters in solns. and in polyethylene films)  
 IT Decarboxylation  
 Decarboxylation  
 \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 (photochem.; conformational control of photochem. reaction routes of Ph and naphthyl esters in solns. and in polyethylene films)  
 IT 722-01-0, Phenyl phenylacetate 830-81-9 93654-98-9, 1-Naphthylphenyl acetate 190189-36-7 251442-74-7  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)  
 (conformational control of photochem. reaction routes of Ph and naphthyl esters in solns. and in polyethylene films)  
 IT 9002-88-4, Polyethylene  
 RL: PRP (Properties)  
 (conformational control of photochem. reaction routes of Ph and naphthyl esters in solns. and in polyethylene films)  
 IT 90-12-0 101-81-5 611-45-0 7381-78-4 251442-85-0  
 RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); FORM (Formation, nonpreparative); PROC (Process)  
 (photoproduct; conformational control of photochem. reaction routes of Ph and naphthyl esters in solns. and in polyethylene films)

RE.CNT 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD  
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- (3) Anon; The Plastically Crystalline Phase 1979
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L7 ANSWER 16 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:909283 CAPLUS

DN 134:78417

ED Entered STN: 28 Dec 2000

TI Method and apparatus for obtaining fluorescence \*\*\*data\*\*\*

IN Potyrailo, Radislav Alexandrovich; Lemmon, John Patrick

PA General Electric Co., USA

SO U.S., 13 pp.

CODEN: USXXAM

DT Patent

LA English

IC ICM G01N021-64

INCL 356318000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 45

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6166804	A	20001226	US 1999-398676	19990920
	WO 2002033383	A1	20020425	WO 2000-US28439	20001013
	W: JP				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				

PRAI US 1999-398676 A 19990920

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 6166804	ICM	G01N021-64
	INCL	356318000
	IPCI	G01N0021-64 [ICM,7]
	IPCR	G01N0021-64 [I,A]; G01N0021-64 [I,C]
	NCL	356/318.000; 250/458.100; 250/461.100; 356/073.000; 356/417.000
	ECLA	G01N021/64H; G01N021/64P
WO 2002033383	IPCI	G01N0021-64 [ICM,7]; G01N0021-47 [ICS,7]
	IPCR	G01N0021-47 [I,A]; G01N0021-47 [I,C]; G01N0021-64 [I,A]; G01N0021-64 [I,C]
	ECLA	G01N021/47F2; G01N021/64P

AB App. for obtaining fluorescence \*\*\*data\*\*\* from a specimen is described which comprise an electromagnetic radiation source; a multi-channel optical analyzer having a fluorescence-emission channel and an absorbance/reflectance channel; a fiber optic bundle having an excitation fiber in optical communication with the electromagnetic radiation source, a reflectance fiber in optical communication with the absorbance/reflectance channel, and a plurality of emission fibers in optical communication with the fluorescence-emission channel; and a focusing lens disposed between the fiber optic bundle and the specimen. Methods of directly detg. the concn. of a target species in a compn. comprising arom. carbonate chain units, esp. during a polycarbonate reaction, using the app. are also described. The target species may be a thermal Fries product.

ST polycarbonate reactor monitoring fluorometer multiple optical fiber

IT Fluorometers

Fluorometry

\*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*

(fluorometers using multiple optical fibers for signal transmission and their use in detns. of species contg. arom. carbonate chain units)

IT Polycarbonates, properties

RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)

(fluorometers using multiple optical fibers for signal transmission and their use in detns. of species contg. arom. carbonate chain units)

IT Polymerization apparatus  
(fluorimeters using multiple optical fibers for signal transmission and  
their use in detns. of species contg. arom. carbonate chain units in  
monitoring)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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Electro-Optics 1998
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L7 ANSWER 17 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:176967 CAPLUS

DN 132:293417

ED Entered STN: 19 Mar 2000

TI On the regioselectivity of imidoyl radical cyclisations

AU Nanni, Daniele; Calestani, Gianluca; Leardini, Rino; Zanardi, Giuseppe

CS Dipartimento di Chimica Organica "A. Mangini", Universita di Bologna,  
Bologna, I-40136, Italy

SO European Journal of Organic Chemistry (2000), (5), 707-711

CODEN: EJOCFK; ISSN: 1434-193X

PB Wiley-VCH Verlag GmbH

DT Journal

LA English

CC 22-5 (Physical Organic Chemistry)

Section cross-reference(s): 74, 75

GI

/ Structure 8 in file .gra /

AB The previously reported tandem cyclization of N-aryl .alpha.-(2-  
cyanophenyl)sulfanyl imidoyl radicals affords one quinoxaline deriv.  
arising from exclusive 1,6-cyclization of the final iminyl radical onto  
the N-aryl ring. When the imidoyl radicals are generated by addn. of  
photolytically generated (2-cyanophenyl)sulfanyl radicals to isocyanides,  
the reaction also gives small amts. of a byproduct (I) that is formed by  
an analogous route and whose X-ray crystallog. \*\*\*data\*\*\* are reported  
here. The formation of this product entails a rare ortho-selective photo-  
\*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of the starting disulfide, followed  
by addn. to the isocyanide and regioselective 1,5-cyclization of the  
resulting imidoyl onto only one of the two available radical acceptors,  
i.e. the cyano group and the sulfide moiety. Semiempirical MNDO-d calcns.  
were performed in order to throw some light on the factors affecting these  
competitive cyclisations.

ST crystallog benzothienquinoxaline deriv; photochem \*\*\*Fries\*\*\*

\*\*\*rearrangement\*\*\* disulfide regioselective cyclization

IT MNDO (molecular orbital)

Transition state structure

(MNDO-d calcns. on competitive cyclization pathways for imidoyl  
radical)

IT Crystal structure

Molecular structure

(byproduct; photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of disulfide  
followed by annulation between annulation between methoxyphenyl  
isocyanide and rearranged arylthio radical intermediate)

IT Cyclization

(competitive; MNDO-d calcns. on competitive cyclization pathways for  
imidoyl radical)

IT Regiochemistry

(photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of disulfide followed by  
annulation between annulation between methoxyphenyl isocyanide and  
rearranged arylthio radical intermediate)

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*

(photochem.; photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of disulfide  
followed by annulation between annulation between methoxyphenyl  
isocyanide and rearranged arylthio radical intermediate)

IT 264257-95-6 264257-97-8

RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)  
 (MNDO-d calcs. on competitive cyclization pathways for imidoyl radical)

IT 264257-96-7  
 RL: FMU (Formation, unclassified); PRP (Properties); RCT (Reactant); FORM (Formation, nonpreparative); RACT (Reactant or reagent)  
 (MNDO-d calcs. on competitive cyclization pathways for imidoyl radical)

IT 264257-94-5  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)  
 (MNDO-d calcs. on competitive cyclization pathways for imidoyl radical)

IT 264257-93-4P  
 RL: BYP (Byproduct); PRP (Properties); PREP (Preparation)  
 (crystallog of byproduct; photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of disulfide followed by annulation between annulation between methoxyphenyl isocyanide and rearranged arylthio radical intermediate)

IT 264257-92-3  
 RL: FMU (Formation, unclassified); RCT (Reactant); FORM (Formation, nonpreparative); RACT (Reactant or reagent)  
 (photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of disulfide followed by annulation between annulation between methoxyphenyl isocyanide and rearranged arylthio radical intermediate)

IT 10349-38-9, 4-Methoxyphenyl isocyanide 33174-74-2, Bis(2-cyanophenyl)disulfide  
 RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)  
 (photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of disulfide followed by annulation between annulation between methoxyphenyl isocyanide and rearranged arylthio radical intermediate)

RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD  
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L7 ANSWER 18 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1999:276037 CAPLUS  
 DN 131:18812  
 ED Entered STN: 05 May 1999  
 TI Gas-phase phenyl acetate conversion on AlPO<sub>4</sub>,  $\gamma$ -Al<sub>2</sub>O<sub>3</sub> and SiO<sub>2</sub> catalysts  
 AU Campelo, J. M.; Chakraborty, R.; Marinas, J. M.; Romero, A. A.  
 CS Department of Organic Chemistry, Sciences Faculty, Cordoba University, Cordoba, E-14004, Spain  
 SO Reaction Kinetics and Catalysis Letters (1998), 65(1), 107-112  
 CODEN: RKCLAU; ISSN: 0304-4122  
 PB Akademiai Kiado  
 DT Journal  
 LA English  
 CC 25-10 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)  
 Section cross-reference(s): 45  
 AB The conversion of Ph acetate over AlPO<sub>4</sub> (Al/P=1),  $\gamma$ -Al<sub>2</sub>O<sub>3</sub> and SiO<sub>2</sub> catalysts generated phenol, by deacetylation, and o-hydroxyacetophenone, by \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*, as the main reaction products. The activity for \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* was in accordance with the acidity \*\*\*data\*\*\* measured vs. cyclohexene skeletal isomerization. Thus, AlPO<sub>4</sub> showed the highest activity. Moreover, o-hydroxy-acetophenone formation increased with the reaction temp. Besides, in AlPO<sub>4</sub> catalysts 4-methylcoumarin and 2-methylchromone were also found, although in low amts.  
 ST phenol prepn; silica gas phase deacetylation phenyl acetate; Fries gas phase deacetylation phenyl acetate; alumina aluminum phosphate alumina silica; aluminum phosphate aluminum phosphate alumina silica  
 IT Deacetylation  
 Deacetylation  
 (catalysts; gas-phase conversion of Ph acetate on aluminum phosphate, alumina or silica catalysts)  
 IT Catalysts  
 Catalysts  
 (deacetylation; gas-phase conversion of Ph acetate on aluminum phosphate, alumina or silica catalysts)  
 IT Deacetylation  
 \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 (gas-phase conversion of Ph acetate on aluminum phosphate, alumina or silica catalysts)  
 IT 7784-30-7, Aluminum phosphate (AlPO<sub>4</sub>)  
 RL: CAT (Catalyst use); USES (Uses)  
 (gas-phase conversion of Ph acetate on aluminum phosphate, alumina or silica catalysts)  
 IT 122-79-2, Acetic acid phenyl ester  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (gas-phase conversion of Ph acetate on aluminum phosphate, alumina or silica catalysts)  
 IT 108-95-2P, Phenol, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)  
 IT 1344-28-1,  $\gamma$ -Alumina, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 ( $\gamma$ -,  $\gamma$ -,  $\gamma$ -; gas-phase conversion of Ph acetate on aluminum phosphate, alumina or silica catalysts)  
 IT 7631-86-9, Silicon oxide (SiO<sub>2</sub>), uses  
 RL: CAT (Catalyst use); USES (Uses)  
 ( $\gamma$ -; gas-phase conversion of Ph acetate on aluminum phosphate, alumina or silica catalysts)  
 RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 RE  
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DN 130:178686  
 ED Entered STN: 14 Jan 1999  
 TI Phototransformation of pesticides in aqueous solution  
 AU Meallier, P.  
 CS Laboratoire de Photochimie Industrielle - L.A.C.E. - U.M.R. 5634  
 Universite Claude Bernard Lyon I, Villeurbanne, F-69622, Fr.  
 SO Handbook of Environmental Chemistry (1999), Volume 2, Issue Pt. L,  
 241-261. Editor(s): Boule, Pierre. Publisher: Springer, Berlin, Germany.  
 CODEN: 45NZAP  
 DT Conference; General Review  
 LA English  
 CC 5-0 (Agrochemical Bioregulators)  
 AB A review with 57 refs. The role of light on the transformation of  
 pesticides in water depends on many parameters. Transformations are  
 categorized as direct or indirect photodegrdn. \*\*\*Data\*\*\* are given  
 on the influence of the spectroscopic properties of pesticides and their  
 effects on the nature of the photochem. reactions with the oxygen species,  
 adjuvants of formulation, humic acids, and water. Chem. reactions, esp.  
 elimination, substitution and hydrolysis, are accelerated by light, while  
 other specific reactions such as photo- \*\*\*Fries\*\*\*  
 \*\*\*rearrangement\*\*\* are initiated by it. With organohalogenated  
 pesticides, singlet or triplet states are involved in the scission of the  
 carbon-chlorine bond, while the triplet state is often the first step for  
 the reaction of the other pesticides. Some reactions are presented to  
 illustrate these two types of mechanisms.  
 ST phototransformation pesticide aq soln review  
 IT Pesticides  
 Photolysis

(phototransformation of pesticides in aq. soln.)

RE.CNT 57 THERE ARE 57 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 RE

- (1) Aguer, J; J Photochem Photobiol A: Chem 1994, V84, P69 CAPLUS
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L7 ANSWER 20 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1998:86255 CAPLUS  
 DN 128:134681  
 ED Entered STN: 14 Feb 1998  
 TI 3-Acetoxy-6-hydroxy-2,4-dimethoxyacetophenone  
 AU Mukherjee, Shubhasish; Parmar, Virinder S.; Errington, William  
 CS Department of Chemistry, University of Delhi, Delhi, 110 007, India  
 SO Acta Crystallographica, Section C: Crystal Structure Communications  
 (1998), C54(1), 123-125  
 CODEN: ACSCEE; ISSN: 0108-2701  
 PB Munksgaard International Publishers Ltd.  
 DT Journal  
 LA English  
 CC 75-8 (Crystallography and Liquid Crystals)  
 Section cross-reference(s): 25  
 AB The title compd., C12H14O6, was isolated from a Fries reaction on  
 3,6-dihydroxy-2,4-dimethoxyacetophenone. Crystallog. \*\*\*data\*\*\* are  
 given. Its mol. structure contains an intramol. H-bonded unit involving  
 the -COCH3 and -OH substituents. The best plane through the acetoxy group  
 makes a dihedral angle of 88.74(5).degree. with the plane of the arom.  
 ring.  
 ST mol structure acetoxy hydroxy methoxy acetophenone  
 IT Crystal structure  
 Molecular structure  
 (of acetoxyhydroxydimethoxyacetophenone)  
 IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 (on dihydroxydimethoxyacetophenone)  
 IT 6962-57-8  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (Fries reaction on)  
 IT 21919-63-1P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and crystal structure of)  
 RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 RE  
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 SMART System 1995

L7 ANSWER 21 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1996:220608 CAPLUS  
 ED Entered STN: 16 Apr 1996  
 TI Dynamic processes in polyethylene, a variable microreactor.  
 AU Zimmerman, Oscar E.; Cui, Changxing; Weiss, Richard G.

CS Department Chemistry, Georgetown University, Washington, DC, 20057, USA  
 SO Book of Abstracts, 211th ACS National Meeting, New Orleans, LA, March  
 24-28 (1996), ORGN-002 Publisher: American Chemical Society, Washington,  
 D. C.  
 CODEN: 62PIAJ  
 DT Conference; Meeting Abstract  
 LA English  
 AB Polyethylene exists in many forms that differ in their degree of  
 crystallinity, mol. wt., degree of branching, mode of processing, etc.  
 The reaction cavities afforded by three well-characterized polyethylene  
 films will be contrasted using (1) the fluorescence decay from pyrenyl  
 groups attached covalently to interior sites of polymer chains and (2)  
 changes in the course of the photo- \*\*\*Fries\*\*\* \*\*\*rearrangements\*\*\*  
 of two 2-naphthyl alkanoates. The influence of film stretching will be  
 examd. also. Based upon the \*\*\*data\*\*\*, models describing the size,  
 shape, and wall-stiffness of the cavities will be advanced. There are at  
 least two distinct families of cavities that can be identified.

L7 ANSWER 22 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1995:348084 CAPLUS  
 DN 122:213727  
 ED Entered STN: 11 Feb 1995  
 TI Planar chiral systems. IV. An efficient route for the preparation of  
 5-formyl-4-hydroxy[2.2]paracyclophane (FHPC)  
 AU Hopf, Henning; Barrett, David G.  
 CS Institut Organische Chemie, Technische Universitaet Braunschweig,  
 Braunschweig, D-38106, Germany  
 SO Liebigs Annalen (1995), (2), 449-51  
 CODEN: LANAEM; ISSN: 0947-3440  
 PB VCH  
 DT Journal  
 LA English  
 CC 25-29 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)  
 OS CASREACT 122:213727  
 GI

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AB The title compd. (I) was prepd. starting from 4-hydroxy[2.2]paracyclophane  
 via \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of its carbamate deriv. The  
 spectroscopic and anal. \*\*\*data\*\*\* of the new compds. are described in  
 full detail.

ST \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* cyclophane hydroxy carbamoyl  
 prepn; chiral planar cyclophane prepn  
 IT Asymmetric synthesis and induction  
 \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 (stereoselective synthesis of 5-formyl-4-hydroxy[2.2]paracyclophane)

IT Cyclophanes  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (para-, chiral, planar cyclophanes; stereoselective synthesis of  
 5-formyl-4-hydroxy[2.2]paracyclophane)

IT 5628-11-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (stereoselective synthesis of 5-formyl-4-hydroxy[2.2]paracyclophane)

IT 161805-34-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (stereoselective synthesis of 5-formyl-4-hydroxy[2.2]paracyclophane)

IT 161805-35-2P 161805-36-3P 161805-37-4P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (stereoselective synthesis of 5-formyl-4-hydroxy[2.2]paracyclophane)

L7 ANSWER 23 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1995:176568 CAPLUS  
 DN 122:213435  
 ED Entered STN: 09 Nov 1994  
 TI Semi-empirical and vibrational studies of flavone and some deuterated  
 analogs



AU Vrielynck, L.; Cornard, J. P.; Merlin, J. C.; Lautie, M. F.  
 CS Lab. Spectrochim. Infrarouge Raman, Univ. Sciences Technol. Lille,  
 Villeneuve d'Ascq, 59655, Fr.  
 SO Spectrochimica Acta, Part A: Molecular and Biomolecular Spectroscopy  
 (1994), 50A(13), 2177-88  
 CODEN: SAMCAS; ISSN: 0584-8539  
 DT Journal  
 LA English  
 CC 22-9 (Physical Organic Chemistry)  
 Section cross-reference(s): 26  
 AB The IR solid state, Raman solid state and tetrachloride soln. spectra of  
 flavone have been obtained. Assignments of most of the vibrational  
 \*\*\*data\*\*\* have been performed by comparison between the spectra of  
 flavone and three isotopic species, deuterated on the A, B and C rings,  
 resp. The vibrational frequencies for all the investigated compds. have  
 been calcd. from the conformational anal. of flavone using the  
 semi-empirical AM1 method and compared with exptl. values. The  
 correlation is more or less satisfactory; however, for some vibrational  
 modes, the calcd. isotopic shifts agree better with expt. than do the  
 frequencies themselves. Specific vibrational modes which retain a benzene  
 ring mono-substituted and ortho-distributed character have been recognized  
 in the spectra, according to literature \*\*\*data\*\*\*, isotopic frequency  
 shifts and graphic representation of the at. displacements.  
 ST MO vibration flavone IR Raman; deuterated flavone IR Raman  
 IT Infrared spectra  
 Molecular vibration  
 Raman spectra  
 (MO and vibrational examn. of flavone and deuterated analogs)  
 IT Isotope effect  
 (deuterium; in MO and vibrational examn. of flavone and deuterated  
 analogs)  
 IT Conformation and Conformers  
 (in MO and vibrational examn. of flavone and deuterated analogs)  
 IT Molecular orbital  
 (AM1, MO and vibrational examn. of flavone and deuterated analogs)  
 IT Oscillator model  
 (harmonic, in MO and vibrational examn. of flavone and deuterated  
 analogs)  
 IT Energy level excitation  
 (vibrational, MO and vibrational examn. of flavone and deuterated  
 analogs)  
 IT Potential energy and function  
 (vibrational, distribution; MO and vibrational examn. of flavone and  
 deuterated analogs)  
 IT 22705-26-6P  
 RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);  
 RACT (Reactant or reagent)  
 ( \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* ; in conversion to deuterated  
 analog in MO and vibrational examn. of flavone)  
 IT 525-82-6, Flavone  
 RL: PRP (Properties)  
 (MO and vibrational examn. of flavone and deuterated analogs)  
 IT 54849-74-0P 54849-75-1P 104607-91-2P, 3-Deuterioflavone  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (MO and vibrational examn. of flavone and deuterated analogs)  
 IT 4165-62-2P, Pentadeuteriophenol  
 RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);  
 RACT (Reactant or reagent)  
 (Schotten-Baumann; in conversion to deuterated analog in MO and  
 vibrational examn. of flavone)  
 IT 1079-02-3P, Pentadeuteriobenzoic acid 43019-90-5P, Benzoyl-d5 chloride  
 88694-16-0P  
 RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);  
 RACT (Reactant or reagent)  
 (in conversion to deuterated analog in MO and vibrational examn. of  
 flavone)  
 IT 108-95-2, Phenol, reactions 1469-94-9 84783-81-3,  
 Perdeuteriophenylmagnesium bromide  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (in conversion to deuterated analog in MO and vibrational examn. of  
 flavone)  
 IT 7782-39-0, Dideuterium, properties

RL: PRP (Properties)  
 (isotope effect and MO and vibrational examn. of flavone and deuterated analogs)  
 IT 161941-90-8  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (oxidn.; in conversion to deuterated analog in MO and vibrational examn. of flavone)

L7 ANSWER 24 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1994:458183 CAPLUS  
 DN 121:58183  
 ED Entered STN: 06 Aug 1994  
 TI Photochemistry and Photodegradation of Polycarbonate  
 AU Pankasem, Surapol; Kuczynski, Joseph; Thomas, J. Kerry  
 CS Department of Chemistry and Biochemistry, University of Notre Dame, Notre Dame, IN, 46656, USA  
 SO Macromolecules (1994), 27(14), 3773-81  
 CODEN: MAMOBX; ISSN: 0024-9297  
 DT Journal  
 LA English  
 CC 35-8 (Chemistry of Synthetic High Polymers)  
 AB Photophys. and photochem. techniques were used to investigate the photodegrdn. of Bisphenol A polycarbonate (PC), with di-Ph carbonate as a model compd. UV excitation of these compds. leads to a fluorescence band with a max. around 300 nm. The triplet state of PC is also obsd. both by transient absorption and by phosphorescence studies. The PC triplet in CH<sub>2</sub>Cl<sub>2</sub> soln. interacts with O, ferrocene, trans-piperylene, and perylene with rate consts. of 6.25 .times. 10<sup>8</sup>, 2.89 .times. 10<sup>8</sup>, 3.05 .times. 10<sup>8</sup>, and 5.60 .times. 10<sup>8</sup> M<sup>-1</sup> s<sup>-1</sup>, resp. A comparison of the absorption and the fluorescence \*\*\*data\*\*\* of the photointermediates and products of photolysis of diphenylcarbonate to those of polycarbonate indicated that degrdn. of the polymer, which is enhanced by O, is mainly due to photooxidn. rather than to a photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*. Generation of singlet O in PC does not lead to degrdn., and studies showed that the triplet state of the polymer was not involved in the degrdn. process. It is suggested that C-C bond scission occurs from the short-lived singlet excited state of polycarbonate.  
 ST polycarbonate bisphenol A photodegrdn photochem; model compd diphenyl carbonate photolysis  
 IT Photolysis  
 (of polycarbonates, di-Ph carbonate model compd. in study of)  
 IT Polycarbonates, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (photodegrdn. and photochem. of)  
 IT Quenching  
 (rate consts. of polycarbonate triplet by oxygen or ferrocene or piperylene or perylene)  
 IT Polymer degradation  
 (photochem., of polycarbonates, di-Ph carbonate model compd. in study of)  
 IT 108-95-2P, Phenol, preparation 118-55-8P, Phenyl salicylate  
 103810-94-2P, Dihydroxybenzophenone  
 RL: FORM (Formation, nonpreparative); PREP (Preparation)  
 (formation of, during photolysis of di-Ph carbonate as model compd. to polycarbonates, absorption bands and fluorescence bands of)  
 IT 102-09-0, Diphenyl carbonate  
 RL: USES (Uses)  
 (model compd., to polycarbonates, photodegrdn. and photochem. of)  
 IT 24936-68-3, BisphenolA-carbonic acid copolymer, sru, reactions  
 25037-45-0, BisphenolA-carbonic acid copolymer  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (photodegrdn. and photochem. of)  
 IT 102-54-5, Ferrocene 198-55-0, Perylene 2004-70-8, trans-Piperylene  
 7782-44-7, Oxygen, miscellaneous  
 RL: USES (Uses)  
 (quenching rate consts. of polycarbonate triplet by)

L7 ANSWER 25 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1993:22098 CAPLUS  
 DN 118:22098  
 ED Entered STN: 24 Jan 1993  
 TI Directed ortho metalation - radical-induced cyclization synthetic

connections. A route to highly substituted benzofurans  
 AU Tsukazaki, Masao; Snieckus, Victor  
 CS Guelph-Waterloo Cent. Grad. Work Chem., Univ. Waterloo, Waterloo, ON, N2L  
 3G1, Can.  
 SO Canadian Journal of Chemistry (1992), 70(5), 1486-91  
 CODEN: CJCHAG; ISSN: 0008-4042  
 DT Journal  
 LA English  
 CC 27-7 (Heterocyclic Compounds (One Hetero Atom))  
 Section cross-reference(s): 25  
 OS CASREACT 118:22098  
 GI

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AB The synthesis of (aminocarbonyl)benzofurans which constitute analogs of  
 5-lipoxygenase inhibitors, is described. The route, representing a  
 potential general method for benzofuran construction, proceeds from Ph  
 carbamate I and involves directed ortho metalation of I to yield II,  
 anionic ortho- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* from II to III, and  
 radical-induced cyclization of IV to benzofuran V. The compds. thus  
 prepd. are analogs of 7-chloro-3-methyl-5-propyl-4-benzofuranol derivs.  
 which are 5-lipoxygenase inhibitors (no \*\*\*data\*\*\* ).  
 ST lipoxygenase inhibitor aminocarbonyl benzofuran prepn; metalation Fries  
 radical cyclization phenyl carbamate  
 IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 (ortho metalation and radical cyclization and, of Ph carbamates,  
 (aminocarbonyl)benzofurans from (analogs 5-lipoxygenase inhibitors))  
 IT Metalation  
 (radical cyclization and \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* and,  
 of Ph carbamates, (aminocarbonyl)benzofurans from (analogs  
 5-lipoxygenase inhibitors))  
 IT Ring closure and formation  
 (homolytic, ortho metalation and \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 and, of Ph carbamates, (aminocarbonyl)benzofurans from (analogs  
 5-lipoxygenase inhibitors))  
 IT 814-68-6, Acryloyl chloride  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (acylation with, of bromochloro(carbamoyl)methoxyphenol)  
 IT 106-95-6, Allyl bromide, reactions 106-96-7, Propargyl bromide  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (alkylation with, of bromochloro(carbamoyl)methoxyphenol)  
 IT 85630-17-7  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (demethylation of)  
 IT 80619-02-9, 5-Lipoxygenase  
 RL: USES (Uses)  
 (inhibitors, (aminocarbonyl)benzofurans (chloro(methyl)propylbenzofuran  
 ol analogs))  
 IT 144986-53-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and alkylation of)  
 IT 144986-52-7P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and alkylation or desilylation of)  
 IT 144986-59-4P 144986-66-3P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and bromination of)  
 IT 144986-51-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and carbamoylation of)  
 IT 144986-56-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and dehydrogenation of)  
 IT 144986-57-2P

RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and derivatization of)  
 IT 144986-47-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and metalation/carbamoylation/rearrangement or  
 metalation/chlorination of)  
 IT 143643-69-0P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and methoxymethylation of)  
 IT 144986-60-7P 144986-61-8P 144986-62-9P 144986-63-0P 144986-67-4P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and radical cyclization of, benzofuran from)  
 IT 141807-24-1P 144986-50-5P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and silylation of)  
 IT 144986-48-1P 144986-49-2P 144986-54-9P 144986-55-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)  
 IT 144986-58-3P 144986-64-1P 144986-65-2P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of, as chloro(propyl)benzofuranol analog (5-lipoxygenase  
 inhibitor analog))  
 IT 88-10-8, N,N-Diethylcarbamoyl chloride  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with chlororesorcinol)  
 IT 95-88-5, 4-Chlororesorcinol  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with diethylcarbamoyl chloride)  
 IT 98-88-4, Benzoyl chloride 123-11-5, p-Anisaldehyde, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with lithiobenzofuran)

L7 ANSWER 26 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1992:550420 CAPLUS  
 DN 117:150420  
 ED Entered STN: 17 Oct 1992  
 TI MO theoretical investigation on the photodissociation of carbon-oxygen  
 bonds in aromatic compounds  
 AU Grimme, Stefan  
 CS Inst. Phys. Theor. Chem., TU Braunschweig, Braunschweig, W-3300, Germany  
 SO Chemical Physics (1992), 163(3), 313-30  
 CODEN: CMPHC2; ISSN: 0301-0104  
 DT Journal  
 LA English  
 CC 22-8 (Physical Organic Chemistry)  
 AB The homolytic photodissocn. process of carbon-oxygen bonds in arom.  
 compds. of the common type R-OPh (R = carbon fragment) was investigated by  
 using MO theory. Orbital and state correlation diagrams for this reaction  
 were constructed and are used in a qual. interpretation of exptl. soln.  
 \*\*\*data\*\*\* . State energies and bond dissocn. enthalpies were calcd.  
 with MNDOC-CI and AM1/AM1-HE methods. Further information was obtained  
 from the calcn. of potential hypersurfaces for the dissocn. from the  
 ground (S0), S1, and T1 states. For this purpose the MNDOC-CI method with  
 full geometry optimization at the CI level of theory was applied. As  
 model compds. para-substituted phenoxyacetones, allyl Ph ether and Ph  
 acetate were investigated. From the results a unified description of the  
 three reactions is deduced using the dissociative .pi..sigma.\* state as a  
 common feature of the primary process. Starting from the nondissociative  
 excited states (n.pi.\* or .pi..pi.\*) the reaction proceeds along a  
 reaction barrier with a calcd. height of 20-40 kcal/mol to the  
 dissociative part of the potential hypersurface. A correlation of the  
 calcd. barrier height with estd. exptl. rate consts. for the photodissocn.  
 is obtained. The findings presented for the .beta.-cleavage of  
 phenoxyacetones and the photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 suggest that these processes should not be classified as typical ketone  
 photoreactions. Structural effects, the reaction multiplicity, and the  
 influence of substituents in the arom. moiety on the reaction efficiency  
 are discussed. From the calcd. \*\*\*data\*\*\* a general model for  
 .pi..sigma.\* photodissocn. processes is deduced which agrees very well

with exptl. observations.

ST photolysis phenyl ether ester MO; acetate phenyl photolysis MO; photochem Claisen Fries MO; bond energy ether ester; MNDOC CI photolysis ether ester; AM1 photolysis ether ester; potential hypersurface photolysis ether ester

IT Molecular orbital  
(AM1/AM1-HE, carbon-oxygen bond photodissocn. in arom. compds. studied by)

IT Potential energy surface and hypersurface  
(for photodissocn. of carbon-oxygen bonds in arom. compds.)

IT Photolysis  
(of carbon-oxygen bond in arom. compds., theor. study of)

IT Quantum chemistry  
(MNDOC-CI, carbon-oxygen bond photodissocn. in arom. compds. studied by)

IT Bond energy  
(carbon-oxygen, in arom. compds., calcn. of)

IT Claisen rearrangement  
\*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
(photochem., theor. study of)

IT 1981-80-2, Allyl 2122-46-5, Phenoxy 3122-07-4, Acetonyl 3170-69-2, Acetyl 6119-32-0, 4-Methoxyphenoxy 41071-24-3, 4-Cyanophenoxy  
RL: PRP (Properties)  
(heat of formation and excitation energy of)

IT 122-79-2, Phenyl acetate 621-87-4, Phenoxyacetone 1746-13-0, Allyl phenyl ether 6698-71-1 18859-28-4  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(photolysis of, theor. study of)

L7 ANSWER 27 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1991:185761 CAPLUS

DN 114:185761

ED Entered STN: 17 May 1991

TI Studies on cannabinoids. Part VI. Synthesis and biological evaluation of trans-4a,10a-3-methyl-5-hydroxy-7-n-pentyl-1,2,3,4,4a,9,10,10a-octahydrophenanthrene

AU Pillai, K. M. R.; Kapil, R. S.; Anand, Nitya

CS Cent. Drug Res. Inst., Lucknow, 226 001, India

SO Indian Journal of Chemistry, Section B: Organic Chemistry Including Medicinal Chemistry (1991), 30B(2), 195-200  
CODEN: IJSBDB; ISSN: 0376-4699

DT Journal

LA English

CC 30-10 (Terpenes and Terpenoids)  
Section cross-reference(s): 1

GI

/ Structure 11 in file .gra /

AB Diels-Alder reaction of 2-methoxy-4-pentylcinnamic acid with H<sub>2</sub>C:CMech:CH<sub>2</sub> gave cycloadduct I which was elaborated to the title compd. (II). II was mildly analgesic but without pentobarbitone interaction (no \*\*\*data\*\*\*). Thus replacement of the pyran oxygen of tetrahydrocannabinol with a methylene group considerably reduces its analgesic activity.

ST methylhydroxypentyl-octahydrophenanthrene prepn analgesic; phenanthrene hydroxymethylpentyl-octahydro prepn analgesic; cannabinoid octahydrophenanthrene analog

IT Analgesics  
(octahydrophenanthrene)

IT 78-79-5, Isoprene, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(Diels-Alder reaction of, with pentylcinnamic acid)

IT 141-82-2, Propanedioic acid, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(Knoevenagel condensation of, with benzaldehyde)

IT 20056-66-0, 3-Pentylphenol  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(acetylation of)

IT 133301-49-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

(Reactant or reagent)  
 (prepn. and Diels-Alder reaction of, with isoprene)  
 IT 132537-29-2P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* )  
 IT 133301-48-1P, 2-Methoxy-4-pentylbenzaldehyde  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and Knoevenagel condensation of, with malonic acid)  
 IT 133301-59-4P  
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological  
 study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use);  
 BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (prepn. and analgesic activity of)  
 IT 60441-58-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and bromination of)  
 IT 133301-54-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and catalytic hydrogenation of)  
 IT 133301-58-3P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and demethylation of)  
 IT 133301-57-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and desulfuration of)  
 IT 133301-56-1P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and dithioketalization of)  
 IT 133301-50-5P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and hydride redn. of)  
 IT 133301-53-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and hydrolysis of)  
 IT 133301-55-0P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and intramol. cyclocondensation of, phenanthrenone from)  
 IT 60441-57-8P 133301-47-0P, 2-Methoxy-4-pentylbenzyl alcohol  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and oxidn. of)  
 IT 133301-46-9P, 2-Methoxy-4-pentylbenzoic acid  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and redn.)  
 IT 133301-52-7P 133328-73-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and substitution reaction of, with cyanide)  
 IT 133301-51-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and tosylation of)  
 IT 133301-45-8P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)

L7 ANSWER 28 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1991:163638 CAPLUS  
 DN 114:163638  
 ED Entered STN: 03 May 1991  
 TI Isotopically labeled compounds for hazardous waste site cleanup  
 investigations. Part I. Synthesis of [phenyl-U-14C] labeled  
 2,4-dinitro-6-sec-butylphenol (dinoseb) and [phenyl-U-14C] labeled  
 4-n-propylphenol

AU Goszczynski, Stefan; Crawford, Ronald L.  
 CS Dep. Bacteriol. Biochem., Univ. Idaho, Moscow, ID, 83843, USA  
 SO Journal of Labelled Compounds and Radiopharmaceuticals (1991), 29(1),  
 35-42  
 CODEN: JLCRD4; ISSN: 0362-4803  
 DT Journal  
 LA English  
 CC 25-10 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)  
 OS CASREACT 114:163638  
 AB The \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of [phenyl-U-14C] propionate  
 gave a mixt. of 1-[4-hydroxy[phenyl-U-14C]]-1-propanone and  
 1-[2-hydroxy[phenyl-U-14C]]-1-propanone. The Grignard reaction of  
 1-[2-hydroxy[phenyl-U-14C]]-1-propanone with MeMgBr and sequential  
 hydrogenation and nitration gave [phenyl-U-14C]-labeled dinoseb. The  
 Wolff-Kishner redn. of 1-[4-hydroxy[phenyl-U-14C]]-1-propanone gave  
 [phenyl-U-14C]-labeled 4-propylphenol. The labeled dinoseb and  
 4-propylphenol were prepd. for the studies of biol. cleanup of soils  
 contaminated by alkylphenols (no \*\*\*data\*\*\* ).  
 ST dinoseb label; \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* phenyl propionate  
 label; hydroxyphenylpropanone label Grignard hydrogenation nitration;  
 propylphenol label; Wolff Kishner redn hydroxyphenylpropanone  
 IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 (Grignard reaction and hydrogenation and nitration and, of 14C-Ph  
 propanoate)  
 IT 79-03-8, Propionyl chloride  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (esterification of, with 14C-phenol)  
 IT 73607-76-8, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (esterification with, of propionyl chloride)  
 IT 132899-52-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)  
 IT 132899-53-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and Grignard reaction and elimination and hydrogenation and  
 nitration of, 14C-dinoseb from)  
 IT 132899-54-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and Wolff-Kishner redn. of)  
 IT 132899-55-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and hydrogenation of)  
 IT 119950-19-5P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and nitration of)  
 IT 105184-42-7P 132899-56-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)  
 L7 ANSWER 29 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1991:82926 CAPLUS  
 DN 114:82926  
 ED Entered STN: 09 Mar 1991  
 TI Monte Carlo simulation of singlet energy migration and trapping in  
 nonrandom chromophore distributions generated by photoreaction in glassy  
 polymer matrixes  
 AU Wang, Zhiyu; Holden, David A.; McCourt, Frederick R. W.  
 CS Guelph-Waterloo Cent. Grad. Work Chem., Univ. Waterloo, Waterloo, ON, N2L  
 3G1, Can.  
 SO Macromolecules (1991), 24(4), 893-900  
 CODEN: MAMOBX; ISSN: 0024-9297  
 DT Journal  
 LA English  
 CC 36-5 (Physical Properties of Synthetic High Polymers)  
 AB A Monte Carlo simulation is conducted for singlet energy migration and  
 trapping of the chromophore distribution generated when a reactant is  
 converted photochem. under diffusion-free conditions into a product that

acts as a long-range quencher. The simulation proceeds in 3 stages: randomly-distributed donors are generated, followed by conversion to nonrandom distributions of donors and quenchers, and finally simulation of singlet electronic energy migration and trapping by the Forster mechanism. The sensitivity of the model to such parameters as ensemble size and no. of donors and quenchers is investigated. In the nonrandom distributions generated in this simulation, quencher chromophores tend to be spaced a min. distance corresponding to the Forster radius for donor-quencher transfer. Conversion-time curves are generated which agree with exptl.

\*\*\*data\*\*\* . Donor decay profile functions differ significantly for random and nonrandom distributions at the same bulk chromophore concns. The simulated energy-transfer functions are used to construct donor fluorescence decay curves, which are then compared in detail with

\*\*\*data\*\*\* from earlier work on 2-naphthyl acetate irradiated in PMMA.

ST Monte Carlo energy migration polymer; singlet energy migration polymer simulation

IT Chromophores and Chromophoric systems  
(naphthyl acetate, \*\*\*Fries\*\*\* photochem. \*\*\*rearrangement\*\*\* of, Monte Carlo simulation of)

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
(photochem., of naphthyl acetate, Monte Carlo simulation of)

IT 1523-11-1, 2-Naphthyl acetate

RL: RCT (Reactant); RACT (Reactant or reagent)

(Monte Carlo simulation of photochem. Fries reaction of)

IT 574-19-6P 10441-41-5P, 2-Hydroxy-6-acetyl naphthalene

RL: PREP (Preparation)

(prodn. of, in photochem. Fries reaction of naphthyl acetate)

L7 ANSWER 30 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1990:514845 CAPLUS

DN 113:114845

ED Entered STN: 29 Sep 1990

TI Preparation of calixarene derivatives

IN Morita, Utaka

PA Japan

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C07C039-17

ICS C07C037-055; C07C049-83; C07C050-02; C07C069-035; C07C215-84;  
C07C233-25; C07C245-08; C07C245-10; C09K003-00

CC 25-29 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 02015040	A2	19900118	JP 1988-164746	19880701
	JP 08022827	B4	19960306		
PRAI	JP 1988-164746		19880701		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 02015040	ICM	C07C039-17
	ICS	C07C037-055; C07C049-83; C07C050-02; C07C069-035; C07C215-84; C07C233-25; C07C245-08; C07C245-10; C09K003-00
	IPCI	C07C0039-17 [ICM,5]; C07C0037-055 [ICS,5]; C07C0049-83 [ICS,5]; C07C0050-02 [ICS,5]; C07C0069-035 [ICS,5]; C07C0215-84 [ICS,5]; C07C0233-25 [ICS,5]; C07C0245-08 [ICS,5]; C07C0245-10 [ICS,5]; C09K0003-00 [ICS,5]

OS MARPAT 113:114845

GI For diagram(s), see printed CA Issue.

AB Calixarene compds. (I, II; n = 3-8), useful as chelating agents for selective metal transport, biol. redox action, and conductive charge-transfer complexes (no \*\*\*data\*\*\* ), are prepd. \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of a soln. of 5.0 g acetoxy compd. III with AlCl<sub>3</sub> in PhNO<sub>2</sub> at 50-60.degree. gave 4.73 g phenol deriv. IV (R = Ac), which (1.5 g) was dissolved in HOAc-H<sub>2</sub>SO<sub>4</sub> and treated with NaNH<sub>2</sub> at 65.degree. to give 1.15 g acetamide deriv. IV (R = AcNH) (V). A soln. of 1 g V in HOAc was stirred with 3.02 g FeCl<sub>3</sub> in 36% HCl at 50.degree. to give 0.5 g II (n = 4). Also prepd. were I (n = 4, 6) and II (n = 6).

ST calixarene prepn chelating agent; charge transfer complex calixarene



prepn; metal ion transport calixarene prepn; biol redox action calixarene prepn

IT Chelating agents  
(calixarene compds.)

IT 128223-39-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
( \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)

IT 109894-43-1P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and amidation of)

IT 125583-10-0P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and hydrolysis of)

IT 125583-09-7P 125583-11-1P 128223-41-6P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and oxidn. of)

IT 124646-91-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and redn. of)

IT 125608-57-3P 128223-42-7P 128223-43-8P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

IT 125583-07-5P 125583-08-6P 128223-44-9P 128223-45-0P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of, as chelating agent)

IT 96107-95-8  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with benzenediazonium chloride)

L7 ANSWER 31 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1990:197775 CAPLUS

DN 112:197775

ED Entered STN: 26 May 1990

TI \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* in (N-acylamino)phenyl  
(meth)acrylates

AU Syromyatnikov, V. G.; Paskal, L. P.; Kolendo, A. Yu.

CS Kiev. Gos. Univ., Kiev, USSR

SO Ukrainskii Khimicheskii Zhurnal (Russian Edition) (1989), 55(8), 855-8  
CODEN: UKZHAU; ISSN: 0041-6045

DT Journal

LA Russian

CC 25-19 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)  
Section cross-reference(s): 35

OS CASREACT 112:197775

GI

/ Structure 12 in file .gra /

AB Irradn. of title compds. m- and p-CH<sub>2</sub>:CRCO<sub>2</sub>C<sub>6</sub>H<sub>4</sub>NHCOR<sub>1</sub> (R = Me, R<sub>1</sub> = Me, Et, Pr; R = H, R<sub>1</sub> = Me) in EtOH gave primarily hydroxy ketones I (R<sub>2</sub> = 4- and 5-NHCOR<sub>1</sub>) and easily oxidizable aminophenols II (R<sub>3</sub> = NH<sub>2</sub>, R<sub>4</sub> = COR<sub>1</sub>; R<sub>3</sub> = COR<sub>1</sub>, R<sub>4</sub> = NH<sub>2</sub>) in smaller amts. Some polymn. was also obsd. UV, IR, and <sup>1</sup>H NMR spectral \*\*\*data\*\*\* are discussed.

ST methacrylate acylaminophenyl photochem \*\*\*Fries\*\*\*  
\*\*\*rearrangement\*\*\*; acrylate acylaminophenyl photochem \*\*\*Fries\*\*\*  
\*\*\*rearrangement\*\*\*; polymn photochem acylaminophenyl methacrylate  
acrylate; aminohydroxyphenyl vinyl ketone

IT \*\*\*Rearrangement\*\*\*  
(of acylamino groups during photochem. \*\*\*Fries\*\*\*  
\*\*\*rearrangement\*\*\* of (N-acylamino)phenyl (meth)acrylates)

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
Polymerization  
(photochem., of (N-acylamino)phenyl (meth)acrylates)

IT 126742-61-8P 126742-62-9P 126742-63-0P 126742-64-1P 126742-71-0P  
126742-72-1P 126742-73-2P 126742-74-3P  
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(formation and oxidn. of)

IT 35911-26-3 37796-01-3 37796-05-7 86229-41-6 86229-44-9  
 126742-56-1 126742-65-2 126742-66-3  
 RL: PROC (Process)

(photochem. \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* and polymn. of)

IT 126742-57-2P 126742-58-3P 126742-59-4P 126742-60-7P 126742-67-4P  
 126742-68-5P 126742-69-6P 126742-70-9P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)

L7 ANSWER 32 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1990:76112 CAPLUS  
 DN 112:76112  
 ED Entered STN: 03 Mar 1990

TI Aromatic rearrangements in the benzene series. Part 5. The \*\*\*Fries\*\*\*  
 \*\*\*rearrangement\*\*\* of phenyl benzoate: the \*\*\*rearranging\*\*\*  
 species. The effect of tetrabromoaluminate ion on the ortho/para ratio:  
 the noninvolvement of the proton as a cocatalyst

AU Dawson, Ian M.; Gibson, Julia L.; Hart, Lionel S.; Waddington, Catherine  
 R.

CS Dep. Org. Chem., Univ. Bristol, Bristol, BS8 1TS, UK  
 SO Journal of the Chemical Society, Perkin Transactions 2: Physical Organic  
 Chemistry (1972-1999) (1989), (12), 2133-9  
 CODEN: JCPKBH; ISSN: 0300-9580

DT Journal  
 LA English  
 CC 22-6 (Physical Organic Chemistry)

AB Kinetic studies show that in the rearrangement of Ph benzoate catalyzed by  
 anhyd. AlBr<sub>3</sub> in homogeneous soln. in chlorobenzene, the actual species  
 undergoing rearrangement is PhCO<sub>2</sub>Ph-AlBr<sub>3</sub> (when a 1:1 molar ratio of  
 catalyst:ester is used). Addn. of AlBr<sub>4</sub><sup>-</sup> to the reaction mixt. (as Bu<sub>4</sub>N<sup>+</sup>  
 AlBr<sub>4</sub><sup>-</sup>, which itself causes no rearrangement) gives lower ortho/para  
 ratios than are found in the absence of this ion, the ratio decreasing as  
 the quantity of AlBr<sub>4</sub><sup>-</sup> increases. In the absence of deliberately added  
 AlBr<sub>4</sub><sup>-</sup>, <sup>27</sup>Al NMR shows that AlBr<sub>4</sub><sup>-</sup> is undetectable at the beginning of the  
 1:1 rearrangement reaction (1 AlBr<sub>3</sub>:1 PhCO<sub>2</sub>Ph), though it accumulates  
 during the reaction; but that ca. 0.8% of the AlBr<sub>3</sub> is present as this ion  
 at the start of the closely related 1:1:1 acylation reaction (1 AlBr<sub>3</sub>:1  
 PhCOBr:1 PhOH), accumulating during the course of this reaction also.  
 Thus, the different behavior of the rearrangement and acylation reactions  
 (as indicated by their o:p ratios, and the variation of these with time)  
 is explained by the initial absence of AlBr<sub>4</sub><sup>-</sup> from, or its initial  
 presence in, the various reaction mixts. Rearrangement reactions carried  
 out with a stream of nitrogen bubbled through them to remove HBr show o:p  
 ratios which support the above conclusion, but more rigorous proof comes  
 from acylation reactions involving PhCOBr and PhO<sup>-</sup> Na<sup>+</sup> (rather than PhOH),  
 which give only NaBr; i.e. H<sup>+</sup> and (sol.) Br<sup>-</sup> are not formed. Under the  
 influence of AlBr<sub>3</sub>, these reactions then mimic the 1:1 rearrangement  
 reactions, but if Bu<sub>4</sub>N<sup>+</sup> Br<sup>-</sup> is also added with the AlBr<sub>3</sub>, the subsequent  
 rearrangements mimic the 1:1:1 acylation reactions. This excludes H<sup>+</sup> as a  
 cocatalyst in the 1:1 rearrangement reaction. Finally, calorimetric  
 measurements provide \*\*\*data\*\*\* supporting the proposed mechanism of  
 the first stage of the 1:1 rearrangement, and investigations of the  
 initial stages of the 1:1 rearrangement and 1:1:1 acylation reactions are  
 described.

ST \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* phenyl benzoate; mechanism  
 \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*

IT Kinetics of \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 (of Ph benzoate in presence of aluminum bromide)

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 (of Ph benzoate, in presence of aluminum bromide, mechanism of)

IT 93-99-2, Phenyl benzoate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 ( \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of, in presence of aluminum  
 bromide, kinetics and mechanism of)

IT 7727-15-3, Aluminum bromide  
 RL: PRP (Properties)  
 (Ph benzoate \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* in presence of,  
 kinetics and mechanism of)

L7 ANSWER 33 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1990:7246 CAPLUS

DN 112:7246  
ED Entered STN: 06 Jan 1990  
TI 2-Hydroxy ketones. XX. New Mannich-Werner bases of 7-hydroxy-4-methyl-6-  
and 8-propionylcoumarin  
AU Cascaval, Alexandru; Bibian, Stefan Cilianu  
CS Dep. Org. Macromol. Chem., Polytech. Inst. Iasi, Iasi, R-6600, Rom.  
SO Revue Roumaine de Chimie (1988), 33(9-10), 911-16  
CODEN: RRCHAX; ISSN: 0035-3930  
DT Journal  
LA English  
CC 26-9 (Biomolecules and Their Synthetic Analogs)  
Section cross-reference(s): 1  
OS CASREACT 112:7246  
GI

/ Structure 13 in file .gra /

AB Pyranocoumarins I and II (NRR1 = NET2, piperidino) were prepd. by  
\*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of 4-methyl-7-propionyloxycoumarin  
followed by Mannich reaction of the title coumarins. II have potent  
antihypertensive activity (no \*\*\*data\*\*\* ).  
ST pyranocoumarin aminomethyl; antihypertensive aminomethylpyranocoumarin  
IT Antihypertensives  
(aminomethylpyranocoumarins)  
IT 3361-13-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
( \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)  
IT 124039-92-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(aminomethylation of)  
IT 3361-71-5P 39818-42-3P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and Mannich reaction of)  
IT 124039-90-3P 124039-91-4P 124039-95-8P 124039-96-9P  
RL: BAC (Biological activity or effector, except adverse); BSU (Biological  
study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use);  
BIOL (Biological study); PREP (Preparation); USES (Uses)  
(prepn. and antihypertensive activity of)  
IT 124039-88-9P 124039-89-0P 124039-93-6P 124039-94-7P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

L7 ANSWER 34 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1989:212365 CAPLUS  
DN 110:212365  
ED Entered STN: 10 Jun 1989  
TI Preparation of substituted phenones useful for inducing cell  
differentiation  
IN Morris, Howard Redfern; Kay, Robert Roger; Masento, Mark Steven; Taylor,  
Graham Walter  
PA Research Corp., UK  
SO PCT Int. Appl., 21 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
IC ICM C07C049-84  
ICS C07C049-825; C07C049-835; C07C049-83; C07C045-54; C07C045-42  
CC 25-16 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)  
Section cross-reference(s): 10  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
PI	WO 8809321	A1	19881201	WO 1988-GB406	19880523
	W: JP, US				
	RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
EP	363392	A1	19900418	EP 1988-904415	19880523
	R: DE, FR, GB, IT				
JP	03501120	T2	19910314	JP 1988-504118	19880523
US	5037854	A	19910806	US 1990-438437	19900122

PRAI GB 1987-12200	A	19870521
WO 1988-GB406	W	19880523

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 8809321	ICM	C07C049-84
	ICS	C07C049-825; C07C049-835; C07C049-83; C07C045-54; C07C045-42
	IPCI	C07C0049-84 [ICM,4]; C07C0049-825 [ICS,4]; C07C0049-835 [ICS,4]; C07C0049-83 [ICS,4]; C07C0045-54 [ICS,4]; C07C0045-42 [ICS,4]
	IPCR	C07C0045-00 [I,A]; C07C0045-00 [I,C]; C07C0045-42 [I,A]; C07C0045-54 [I,A]; C07C0049-00 [I,C]; C07C0049-825 [I,A]; C07C0049-83 [I,A]; C07C0049-835 [I,A]; C07C0049-84 [I,A]
EP 363392	IPCI	C07C0049-84 [ICM,5]; C07C0049-825 [ICS,5]; C07C0049-835 [ICS,5]; C07C0049-83 [ICS,5]; C07C0045-54 [ICS,5]; C07C0045-42 [ICS,5]
	IPCR	C07C0045-00 [I,A]; C07C0045-00 [I,C]; C07C0045-42 [I,A]; C07C0045-54 [I,A]; C07C0049-00 [I,C]; C07C0049-825 [I,A]; C07C0049-83 [I,A]; C07C0049-835 [I,A]; C07C0049-84 [I,A]
JP 03501120	IPCI	C07C0049-825 [ICM,5]; C07C0045-42 [ICS,5]; C07C0045-45 [ICS,5]; C07C0049-83 [ICS,5]; C07C0049-835 [ICS,5]; C07C0049-84 [ICS,5]
US 5037854	IPCI	A61K0031-12 [ICM,5]
	IPCR	C07C0045-00 [I,A]; C07C0045-00 [I,C]; C07C0045-42 [I,A]; C07C0045-54 [I,A]; C07C0049-00 [I,C]; C07C0049-825 [I,A]; C07C0049-83 [I,A]; C07C0049-835 [I,A]; C07C0049-84 [I,A]
	NCL	514/687.000; 568/319.000; 568/322.000; 568/337.000
OS MARPAT 110:212365		
GI		

/ Structure 14 in file .gra /

AB Title compds. I (R1 = alkyl, cycloalkyl, alkenyl; R2 = alkoxy, HO; R3 = H, halo; R4 = halo) having biol. action of inducing cell differentiation (no \*\*\*data\*\*\* ) are prep'd. by reacting a benzenetriol with R1COCl or with R1C:NH.HCl to form a ketimine-HCl which is then hydrolyzed. 3,5-(HO)2C6H3OMe 1 equiv. was reacted with 1 equiv. Me2CHCH2COC1 in pyridine for 1 h to give 3,5-(HO)(MeO)C6H3O2CCHMe2 (II) and 5-(MeO)C6H3(O2CCHMe2)2-1,3 in approx. equal amts. The isolated II intermediate was subjected to a \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* reaction in present of AlCl3, in CH2Cl2, by adding the ester over 1 h and reacting at either 25 or 100.degree. for 4 h following by standing overnight at room temp.

ST butyrophenone substituted prepn cell differentiation; valerophenone substituted prepn cell differentiation; cell differentiation substituted phenone prepn

IT Animal cell  
(differentiation of, substituted phenones as inducers of)

IT 2174-64-3, 3,5-Dihydroxyanisole  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(esterification by, of isovaleroyl chloride)

IT 108-12-3, Isovaleroyl chloride  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(esterification of, with dihydroxyanisole)

IT 120529-45-5P, 3-Hydroxy-5-methoxyphenyl isobutyrate  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)

IT 120529-46-6P, 5-Methoxyphenyl-1,3-diisobutyrate 120529-47-7P, 2,6-Dihydroxy-3-chloro-4-methoxyvalerophenone  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

IT 113411-16-8P, 2,6-Dihydroxy-3,5-dichloro-4-methoxyvalerophenone 118222-70-1P, 2,6-Dihydroxy-3,5-dichloro-4-methoxybutyrophenone  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of, as inducer of cell differentiation)

IT 542-54-1, Isohexanonitrile  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with dihydroxyanisole, ketimine by)

L7 ANSWER 35 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1989:153683 CAPLUS  
 DN 110:153683  
 ED Entered STN: 30 Apr 1989  
 TI Absolute chemically induced nuclear polarizations and yields from geminate radical-pair reactions. A test of high-field radical-pair theories  
 AU Vollenweider, Jean Karl; Fischer, Hanns  
 CS Phys. Chem. Inst., Univ. Zurich, Zurich, CH-8057, Switz.  
 SO Chemical Physics (1988), 124(3), 333-45  
 CODEN: CMPHC2; ISSN: 0301-0104

DT Journal  
 LA English  
 CC 22-13 (Physical Organic Chemistry)  
 Section cross-reference(s): 77

AB Abs. net nuclear polarizations and reaction yields are detd. for the products of geminate radical pairs formed after triplet .alpha.-cleavage of di-tert-Bu ketone and during the singlet photo-Fries reaction of p-methylphenyl p-chlorobenzoate. These and other exptl. \*\*\*data\*\*\* are compared with values predicted by several variants of the high-field radical-pair theory. Full agreement between expt. and theory is found to require proper inclusion of electron-exchange effects in the latter, and a previous anal. model is modified to allow for this.

ST CIDNP geminate radical pair reaction; triplet cleavage dibutyl ketone  
 CIDNP; photochem Fries tolyl chlorobenzoate CIDNP; electron exchange CIDNP

IT Exchange, quantum mechanical  
 (CIDNP high-field radical-pair theory in relation to)

IT Electron spin resonance  
 (of chlorobenzoyl and cresyl radicals)

IT Photolysis  
 (of di-tert-Bu ketone, CIDNP in)

IT Nuclear polarization  
 (chem. induced dynamic, in di-tert-Bu ketone photolysis and tolyl chlorobenzoate photo-Fries reaction, and exchange-modified high-field radical-pair theory of)

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 (photochem., of tolyl chlorobenzoate, CIDNP in)

IT 106-44-5P, p-Cresol, preparation 6279-05-6P 99221-29-1P 119920-84-2P  
 RL: PREP (Preparation)  
 (formation and CIDNP of)

IT 2652-67-7P, p-Chlorobenzoyl radical 3174-48-9P  
 RL: PRP (Properties); FORM (Formation, nonpreparative); PREP (Preparation)  
 (formation and ESR of)

IT 15024-10-9, p-Cresyl p-chlorobenzoate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (photo-Fries reaction of, CIDNP study of)

IT 815-24-7  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (photolysis of, CIDNP study of)

IT 3457-46-3P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)

L7 ANSWER 36 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1988:610280 CAPLUS  
 DN 109:210280  
 ED Entered STN: 10 Dec 1988  
 TI Influence of the stereochemistry on the rate of cyclization of cis- and trans-o-hydroxyaryl alkenyl ketones. Mechanistic implications  
 AU Miranda, Miguel A.; Primo, Jaime; Tormos, Rosa  
 CS Dep. Quim. Org., Fac. Farm., Valencia, 46010, Spain  
 SO Tetrahedron (1987), 43(10), 2323-8  
 CODEN: TETRAB; ISSN: 0040-4020

DT Journal  
 LA English  
 CC 22-3 (Physical Organic Chemistry)  
 OS CASREACT 109:210280  
 GI

/ Structure 15 in file .gra /

AB Irradn. of the aryl trans-2-butenates I (R, R1 = MeO, H; Me, H; Et, H; Me, Me) affords the corresponding photo-Fries products II, together with their cis isomers III. After sepn. by means of HPLC, the kinetics of the basic cyclization of II and III to the corresponding chromanones were studied. The mechanistic implications of the obtained \*\*\*data\*\*\* are discussed.

ST kinetics cyclization hydroxyaryl alkenyl ketone; mechanism cyclization hydroxyaryl alkenyl ketone; stereochem cyclization hydroxyaryl alkenyl ketone

IT Kinetics of cyclocondensation reaction  
(of hydroxyphenyl propenyl ketones)

IT Configuration  
(of hydroxyphenyl propenyl ketones, cyclocondensation in relation to)

IT Cyclocondensation reaction  
(of hydroxyphenyl propenyl ketones, mechanism of chromanone formation by)

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
(photochem., of aryl butenates)

IT 625-35-4  
RL: PRP (Properties)  
(acylation with, of phenols)

IT 41873-80-7P 117457-72-4P 117457-73-5P 117457-74-6P 117457-75-7P  
117457-76-8P 117457-77-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and cyclocondensation of, kinetics and mechanism of)

IT 41873-74-9P 55673-53-5P 117457-69-9P 117457-70-2P 118443-58-6P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)

IT 117457-78-0P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

IT 117457-71-3P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn., photoisomerization, and cyclocondensation of, kinetics and mechanism of)

IT 105-67-9 123-07-9  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with butenoyl chloride)

L7 ANSWER 37 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1987:439397 CAPLUS

DN 107:39397

ED Entered STN: 08 Aug 1987

TI Polyhydroxybenzophenones

IN Inoue, Yasuhiko; Hata, Kazuhiko; Oishi, Toshiro

PA Sumitomo Chemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C07C049-83

ICS C07C045-54; C07C049-84

ICA B01J027-08; B01J027-128; B01J027-135; B01J027-138

CC 25-16 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)

Section cross-reference(s): 74

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 61293945	A2	19861224	JP 1985-121949	19850605
	JP 03062704	B4	19910926		
PRAI	JP 1985-121949		19850605		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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JP 61293945 ICM C07C049-83  
ICS C07C045-54; C07C049-84  
ICA B01J027-08; B01J027-128; B01J027-135; B01J027-138  
IPCI C07C0049-83 [ICM,4]; C07C0045-54 [ICS,4]; C07C0049-84  
[ICS,4]; B01J0027-08 [ICA,4]; B01J0027-128 [ICA,4];  
B01J0027-135 [ICA,4]; B01J0027-138 [ICA,4]

GI

/ Structure 16 in file .gra /

AB Title compds. I [R = alkyl, alkoxy, halo; a, c = 1-5; b, d = 0-4; (a + b)  
.ltoreq.5, (c + d) .ltoreq.5], useful as UV absorbers (no \*\*\*data\*\*\* ),  
were prepd. by \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of hydroxybenzoates  
II in the presence of halides of Zr, Fe, Zn, Sn, and/or Bi. Thus,  
3-hydroxyphenyl 2,4-dihydroxybenzoate was heated in the presence of ZrCl<sub>4</sub>  
in PhNO<sub>2</sub> at 70.degree. to give 94% 2,2',4,4'-tetrahydroxybenzophenone with  
99% conversion.

ST hydroxybenzoate \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* ;  
hydroxybenzophenone prepn UV absorber

IT Optical filters  
(UV, polyhydroxybenzophenones)

IT 108963-86-6, 3-Hydroxyphenyl 2,4-dihydroxybenzoate  
RL: RCT (Reactant); RACT (Reactant or reagent)  
( \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)

IT 7646-78-8, uses and miscellaneous 7646-85-7, Zinc chloride, uses and  
miscellaneous 7705-08-0, uses and miscellaneous 7787-60-2, Bismuth  
chloride 10026-11-6, Zirconium chloride  
RL: CAT (Catalyst use); USES (Uses)  
(catalyst, for \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of  
hydroxybenzoates)

IT 131-55-5P, 2,2',4,4'-Tetrahydroxybenzophenone 39803-53-7P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of, as UV absorber)

IT 108-46-3, Resorcin, reactions 504-15-4, 3,5-Dihydroxytoluene  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with phosgene, polyhydroxybenzophenones from)

L7 ANSWER 38 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1986:168144 CAPLUS

DN 104:168144

ED Entered STN: 17 May 1986

TI Acylphenols

IN Fujita, Terunori; Ishiguro, Masaharu; Takahata, Kazunori; Saeki, Kenji

PA Mitsui Petrochemical Industries, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C07C049-82

ICS B01J021-16; B01J027-06; C07C045-54

CC 25-16 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)

Section cross-reference(s): 5, 74

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 60252444	A2	19851213	JP 1984-107514	19840529
	JP 05008178	B4	19930201		
PRAI	JP 1984-107514		19840529		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 60252444	ICM	C07C049-82
	ICS	B01J021-16; B01J027-06; C07C045-54
	IPCI	C07C0049-82 [ICM,4]; B01J0021-16 [ICS,4]; B01J0027-06 [ICS,4]; C07C0045-54 [ICS,4]

AB Acylphenols, useful as pesticides, photog. agents, and UV absorbents (no  
\*\*\*data\*\*\* ), were prepd. by reaction of carboxylic acid aryl esters over  
ion-exchanged stratified clay catalyst. Thus, synthetic mica

NaMg2.5(Si4O10)F2 was treated with Al(NO3)3 in H2O to give a catalyst, which (0.8 g) was stirred with 3 g PhCO2Ph (I) and 6 g PhOH at 180.degree. for 4 h to give hydroxybenzophenone in 99% selectivity and 45% conversion of I.

ST acylphenol prepn UV absorbent; pesticide acylphenol prepn; photog agent  
acylphenol prepn; \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* aryl benzoate  
naphthoate

IT Pesticides  
(acylphenols)

IT Photography  
(acylphenols in)

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* catalysts  
(ion-exchanged stratified clay, for aryl benzoates and naphthoates)

IT Optical absorption  
(UV, acylphenols for)

IT 93-99-2 122-79-2 136-36-7 607-55-6 36773-67-8  
RL: RCT (Reactant); RACT (Reactant or reagent)  
( \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of, catalysts for)

IT 56450-90-9  
RL: PROC (Process)  
(ion exchange of, with aluminum, as catalyst for \*\*\*Fries\*\*\*  
\*\*\*rearrangement\*\*\* of aryl benzoates)

IT 1318-93-0, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(ion exchange of, with aluminum, as catalyst for \*\*\*Fries\*\*\*  
\*\*\*rearrangement\*\*\* of aryl benzoates)

IT 131-56-6P 642-29-5P 35344-07-1P 41903-50-8P 101678-16-4P  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except  
adverse); BSU (Biological study, unclassified); SPN (Synthetic  
preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(prepn. of, as pesticide, photog. agent, and UV absorbent)

IT 108-95-2, uses and miscellaneous  
RL: USES (Uses)  
(solvent, for \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of aryl  
benzoates)

IT 90-15-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(solvent, for \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of aryl  
naphthoate)

IT 108-46-3, uses and miscellaneous  
RL: USES (Uses)  
(solvent, for \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of hydroxyphenyl  
benzoate)

L7 ANSWER 39 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1985:615171 CAPLUS

DN 103:215171

ED Entered STN: 28 Dec 1985

TI Naphtho[2,3-c]pyran derivatives

PA Yoshitomi Pharmaceutical Industries, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C07D311-92

ICA A61K031-35

CC 27-13 (Heterocyclic Compounds (One Hetero Atom))

Section cross-reference(s): 1

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 60084280	A2	19850513	JP 1983-192017	19831013
PRAI JP 1983-192017		19831013		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 60084280	ICM	C07D311-92
	ICA	A61K031-35
	IPCI	C07D0311-92 [ICM,4]; A61K0031-35 [ICA,4]

GI



AB The title compd. I (R = R1 = H) and their salts, useful as microbicides (no \*\*\*data\*\*\*), were prep'd. Thus, II was treated with BF<sub>3</sub>.Et<sub>2</sub>O to give 96% III, which was treated with (NH<sub>4</sub>)<sub>2</sub>Ce(NO<sub>3</sub>)<sub>6</sub> to give 83% IV. Reaction of IV with CH<sub>2</sub>:CHCH[Si(Ph)Me<sub>2</sub>]CO<sub>2</sub>Me gave 83% V, which was treated with Me<sub>2</sub>Si(CMe<sub>3</sub>)Cl to give 88% VI [R<sub>2</sub> = COBu, R<sub>3</sub> = Si(CMe<sub>3</sub>)Me<sub>2</sub>], redn. of which gave 74% alc. [VI; R<sub>2</sub> = C(OH)Bu, R<sub>3</sub> = Si(CMe<sub>3</sub>)Me<sub>2</sub>]. Cyclization of the alc. gave 79% VII [R<sub>4</sub> = Si(CMe<sub>3</sub>)Me<sub>2</sub>, R<sub>5</sub> = Me], which was oxidized to give 86% I (R = R1 = Me) (VIII). Demethylation of VIII gave 74% I (R = H, R1 = Me), which was hydrolyzed to give 94% I (R = R1 = H).

ST naphthopyranylacetic acid microbicide; microbicide naphthopyranylacetic acid

IT Bactericides, Disinfectants, and Antiseptics  
((naphthopyranyl)acetic acid derivs.)

IT 98327-18-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(of \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)

IT 98327-22-1P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and cyclization of)

IT 98327-24-3P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and demethylation of)

IT 98327-25-4P 98327-26-5P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and hydrolysis of)

IT 98327-19-6P 98327-23-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and oxidn. of)

IT 98359-13-8P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and protection of)

IT 98327-20-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and reaction of, with Me butenoate deriv.)

IT 98327-21-0P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and redn. of)

IT 98327-30-1P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

IT 98327-28-7P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn., and demethylation of)

IT 98327-29-8P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn., and hydrolysis of)

IT 98327-27-6P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn., and oxidn. of)

IT 82654-01-1  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with valeronaphthoquinone deriv.)

L7 ANSWER 40 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1985:524106 CAPLUS

DN 103:124106

ED Entered STN: 19 Oct 1985

TI 4-Hydroxy-4'-vinylbiphenyl copolymers

IN Tanigaki, Teiichi

PA Tanigaki, Sadakazu, Japan; Kanae Chemical Industry Co., Ltd.; Kanae Paint Co., Ltd.

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM C08F212-32  
ICA C07C039-21  
CC 35-4 (Chemistry of Synthetic High Polymers)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 60063213	A2	19850411	JP 1983-171874	19830916
	JP 60031203	B4	19850720		
PRAI	JP 1983-171874		19830916		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 60063213	ICM	C08F212-32
	ICA	C07C039-21
	IPCI	C08F0212-32 [ICM,4]; C07C0039-21 [ICA,4]

AB The title copolymers having no.-av. mol. wt. (.hivin.Mn) 2400-186,000, good soly. in org. solvents, and excellent thermal stability, are useful for coatings, adhesives, and films (no \*\*\*data\*\*\* ), comprise 8-98 mol% 4-hydroxy-4'-vinylbiphenyl (I) [93249-93-5] units, along with RR1C:CH2 (R = H, Me; R1 = Ph, CO2H, lower alkoxy carbonyl, CN, carbamoyl) and/or maleic anhydride (II) units, and are prepd. using radical catalysts. Thus, I was prepd. by \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of 4-acetoxybiphenyl [148-86-7] to obtain 4-hydroxy-4'-acetyl biphenyl [13021-17-5], followed by redn. with ALiH4 to 4-hydroxy-4'-(1-hydroxyethyl)biphenyl [93249-91-3] and dehydration. Then .apprx.0.897 mol I, .apprx.0.103 mol styrene, and 1.6 g AIBN [78-67-1] were mixed in THF and stirred at 60.degree. under N for 5 h to obtain 87.9:12.1 (mol) I-styrene copolymer [98266-75-2] having intrinsic viscosity (30.degree., THF) 0.621, .hivin.Mn 74,000 and m.p. 209.degree., which when heated in air at 10.degree./min showed residual C 49% at 600.degree..

ST hydroxyvinylbiphenyl copolymer soly thermal stability; biphenyl hydroxyvinyl copolymer thermal stability; vinylhydroxybiphenyl copolymer thermal stability; styrene hydroxyvinylbiphenyl copolymer thermal stability; fire resistant hydroxyvinylbiphenyl copolymer; heat resistant hydroxyvinylbiphenyl copolymer

IT Fire-resistant materials  
Heat-resistant materials  
(hydroxyvinylbiphenyl copolymers)

IT Polymerization catalysts  
(radical, AIBN, for hydroxyvinylbiphenyl with vinyl compds.)

IT Reactivity ratio in polymerization  
(radical, of hydroxyvinylbiphenyl with vinyl comonomers)

IT Polymerization  
(radical, of hydroxyvinylbiphenyl with vinyl compds.)

IT 148-86-7  
RL: RCT (Reactant); RACT (Reactant or reagent)  
( \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)

IT 78-67-1  
RL: CAT (Catalyst use); USES (Uses)  
(catalysts, for copolymn. of hydroxyvinylbiphenyl)

IT 93249-91-3P  
RL: PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process)  
(prepn. and dehydration of)

IT 93249-93-5P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and radical copolymn. of)

IT 13021-17-5P  
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and redn. of)

IT 98266-75-2P 98266-79-6P 98266-80-9P 98266-81-0P 98266-82-1P  
98266-83-2P 98266-84-3P  
RL: PREP (Preparation)  
(prepn. of heat-resistant)

L7 ANSWER 41 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1985:505445 CAPLUS  
DN 103:105445  
ED Entered STN: 04 Oct 1985

TI Poly(4-hydroxy-4'-vinylbiphenyl)  
 PA Tanigaki, Sadakazu, Japan; Kanae Chemical Industry Co., Ltd.; Kanae Paint Co., Ltd.  
 SO Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C08F012-32  
 ICA C07C039-21  
 CC 35-4 (Chemistry of Synthetic High Polymers)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 60063208	A2	19850411	JP 1983-171875	19830916
	JP 60049643	B4	19851102		
PRAI	JP 1983-171875		19830916		

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 60063208	ICM	C08F012-32
	ICA	C07C039-21
	IPCI	C08F0012-32 [ICM,4]; C07C0039-21 [ICA,4]

AB Polymers with excellent thermal stability, useful for coatings, films, and ion-exchange resins (no \*\*\*data\*\*\* ), are prepd. by polymn. of 4-hydroxy-4'-vinylbiphenyl (I) [93249-93-5] using radical or cationic catalysts. Thus, I was prepd. by \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of 4-acetoxybiphenyl [148-86-7] to 4-hydroxy-4'-acetylbiiphenyl [13021-17-5], redn. with AlLiH4 to 4-hydroxy-4'-(1-hydroxyethyl)biphenyl [93249-91-3], and dehydration. Then, a mixt. of 6 g I dissolved in 20 mL THF and 0.025 g AIBN [78-67-1] was shaken at 60.degree. under N for 7.5 h to obtain 20 g polymer [97969-75-0] with intrinsic viscosity (30.degree., THF) 0.084, no.-av. mol. wt. 32,000, and m.p. 215.degree., which when heated at 10.degree./min showed wt. loss 10%, 30%, and 51.5% at 290.degree., 405.degree., and 600.degree. resp.

ST hydroxyvinylbiphenyl polymer thermally stable; biphenyl hydroxyvinyl polymer thermally stable; vinylhydroxybiphenyl polymer thermally stable; AIBN catalyst hydroxyvinylbiphenyl polymn; radical catalyst hydroxyvinylbiphenyl polymn

IT Heat-resistant materials  
 (poly(hydroxyvinylbiphenyl))

IT Polymerization  
 (cationic, of hydroxyvinylbiphenyl)

IT Polymerization  
 (radical, of hydroxyvinylbiphenyl)

IT 148-86-7  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 ( \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)

IT 78-67-1 94-36-0, uses and miscellaneous 109-63-7 7550-45-0, uses and miscellaneous 7646-78-8, uses and miscellaneous  
 RL: CAT (Catalyst use); USES (Uses)  
 (catalysts, for polymn. of hydroxyvinylbiphenyl)

IT 93249-91-3P  
 RL: PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process)  
 (prepn. and dehydration of)

IT 93249-93-5P  
 RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and polymn. of)

IT 13021-17-5P  
 RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and redn. of)

IT 97969-75-0P  
 RL: PREP (Preparation)  
 (prepn., thermal stability, and soly. of)

L7 ANSWER 42 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1985:95339 CAPLUS  
 DN 102:95339

ED Entered STN: 22 Mar 1985  
 TI Extractants for copper extraction. Synthesis of 5-alkyl-2-hydroxyphenone oximes  
 AU Yakshin, V. V.; Mirokhin, A. M.; Ignat'ev, M. M.

CS Inst. Metall. Obogashch., Alma-Ata, USSR  
SO Kompleksnoe Ispol'zovanie Mineral'nogo Syr'ya (1984), (4), 60-4  
CODEN: KIMSDD; ISSN: 0202-1382  
DT Journal  
LA Russian  
CC 25-16 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)  
Section cross-reference(s): 56  
GI

/ Structure 17 in file .gra /

AB Title compds. (I) [Rn = H; R1 = H, R2 = Me, R3 = R4 = H; R1 = Me, R2 =  
C8H17; R3 = R4 = H; R1 = Me3C, R2-4 = Me, H, H; Me, Me, H; Me, H, Me; Me,  
Me, Me; Ph, H, H; Ph, Me, H; R1 = tert-C8H17, R2-4 = Me, H, H; Me, Me, H;  
Ph, H, H; Ph, Me, H; Ph, H, Me; C9H19, H, H; C9H19, Me, H; Rn = NO2 (ortho  
to OH), R1 = C9H19, R2 = Ph, R3-4 = H; Rn = Cl3, R1 = C9H19, R2 = Ph, R3-4  
= H] were prepd. in several ways as exts. for Cu (no \*\*\*data\*\*\* ).  
ST phenolic oxime copper extn; arom oxime copper extn  
IT Oximation  
(of hydroxyphenones, copper extractants by)  
IT 94899-70-4  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(chlorination of)  
IT 7440-50-8, uses and miscellaneous  
RL: USES (Uses)  
(extn. of, phenolic oximes as agents for)  
IT 5454-15-9P 94899-69-1P  
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(formation and \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)  
IT 94899-63-5P  
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(formation and hydrolysis of)  
IT 98-54-4 140-66-9  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(methylation of)  
IT 61516-22-1  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(oxidn. of)  
IT 5396-38-3P 5413-23-0P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and acylation of)  
IT 4090-99-7P 10425-05-5P 57373-81-6P 94899-68-0P 94921-25-2P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and conversion into oxime)  
IT 94899-64-6P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)  
IT 1196-29-8P 41964-56-1P 41964-57-2P 41964-59-4P 41964-61-8P  
41964-63-0P 56875-64-0P 72782-47-9P 94613-04-4P 94613-05-5P  
94613-06-6P 94613-07-7P 94613-08-8P 94613-09-9P 94613-10-2P  
94899-61-3P 94899-62-4P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of, as copper extg. agent)  
IT 5409-99-4P 75069-38-4P 94899-65-7P 94899-66-8P 94899-67-9P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn., demethylation, and oxime formation)

L7 ANSWER 43 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1985:5705 CAPLUS  
DN 102:5705  
ED Entered STN: 12 Jan 1985  
TI .omega.-(Benzhydrylideneamino)alkanoic acids  
IN Kaplan, Jean Pierre  
PA Synthelabo S. A., Fr.  
SO Fr. Demande, 13 pp. Addn. to Fr. Demande Appl. No. 81 21559.  
CODEN: FRXXBL  
DT Patent  
LA French  
IC C07C119-12; A61K031-16; A61K031-195

CC 23-16 (Aliphatic Compounds)  
Section cross-reference(s): 25  
FAN.CNT 7

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	FR 2535318	A2	19840504	FR 1982-18193	19821029
	FR 2535318	B2	19850906		
	FR 2516509	A1	19830520	FR 1981-21559	19811118
	FR 2516509	B1	19850726		
	FI 8203925	A	19830519	FI 1982-3925	19821116
	NO 8203824	A	19830519	NO 1982-3824	19821116
	BE 895042	A1	19830517	BE 1982-209495	19821117
	DK 8205117	A	19830519	DK 1982-5117	19821117
	SE 8206548	A	19830519	SE 1982-6548	19821117
	AU 8290645	A1	19830526	AU 1982-90645	19821117
	JP 58092646	A2	19830602	JP 1982-202836	19821117
	GB 2111051	A1	19830629	GB 1982-32766	19821117
	GB 2111051	B2	19850710		
	ES 517428	A1	19830816	ES 1982-517428	19821117
	ZA 8208470	A	19830928	ZA 1982-8470	19821117
	HU 30787	O	19840328	HU 1982-3686	19821117
	HU 187429	B	19860128		
	CH 653011	A	19851213	CH 1982-6711	19821117
	IL 67283	A1	19860429	IL 1982-67283	19821117
	CA 1204773	A1	19860520	CA 1982-415782	19821117
	NL 8204462	A	19830616	NL 1982-4462	19821118
	US 4588748	A	19860513	US 1984-654068	19840925
PRAI	FR 1981-21559		19811118		
	IL 1976-50019	A	19760712		
	US 1982-442020	A1	19821116		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
FR 2535318	IC	C07C119-12; A61K031-16; A61K031-195
	IPCI	C07C0119-12; A61K0031-16; A61K0031-195
	IPCR	A61K0031-185 [I,C]; A61K0031-19 [I,A]; C07C0045-00 [I,C]; C07C0045-54 [I,A]
FR 2516509	IPCI	C07C0119-12; C07C0049-245; A61K0031-16; A61K0031-195
	IPCR	A61K0031-185 [I,C]; A61K0031-19 [I,A]
FI 8203925	IPCI	C07C
NO 8203824	IPCI	C07C
BE 895042	IPCI	C07C; A61K
DK 8205117	IPCI	C07C
SE 8206548	IPCI	C07C0119-14
AU 8290645	IPCI	C07C0049-83; C07C0119-14
JP 58092646	IPCI	C07C0119-14; A61K0031-135; A61K0031-19
GB 2111051	IPCI	C07C0119-00; A61K0031-16; A61K0031-19; C07C0049-786 [ICA]; C07C0069-78 [ICA]
	IPCR	A61K0031-185 [I,C]; A61K0031-19 [I,A]
ES 517428	IPCI	C07C0119-12; C07C0049-245; A61K0031-16; A61K0031-195
ZA 8208470	IPCI	C07C; A61K
HU 30787	IPCI	C07C0101-04
CH 653011	IPCI	C07C0119-12; C07C0049-245; A61K0031-16
IL 67283	IPCI	C07C0119-14 [ICM,4]; A61K0031-13 [ICS,4]
CA 1204773	IPCI	C07C0119-14 [ICM,4]
	IPCR	A61K0031-185 [I,C]; A61K0031-19 [I,A]
NL 8204462	IPCI	C07C0119-14
US 4588748	IPCI	C07C0103-29 [ICM,4]; A61K0031-165 [ICS,4]
	IPCR	A61K0031-185 [I,C]; A61K0031-19 [I,A]
	NCL	514/641.000; 514/507.000; 562/440.000; 564/107.000

OS CASREACT 102:5705; MARPAT 102:5705  
GI

/ Structure 18 in file .gra /

AB Acids and derivs. I [R = H, Me; R1 = OMe, alkyl; R2 = halo, Me; n = 1, 2, 3, 4; R3 = NH2, OH, OM (M = alkali metal, 1/2 alk. earth metal)], useful as antidepressants and anticonvulsants (no \*\*\*data\*\*\*), were prepd. GABA was treated with 5-chloro-2-hydroxy-3-methyl-4'-ethylbenzophenone and NaOEt in EtOH to give I (R = H, R1 = 4-Et, R2 = 5-Cl, n = 3, R3 = OH).

ST benzhydrylideneaminobutyric acid prepn antidepressant; butyric acid  
benzhydrylideneamino; anticonvulsant benzhydrylideneaminobutyric acid  
prepn; condensation benzophenone GABA  
IT Anticonvulsants and Antiepileptics  
Antidepressants  
(.omega.-(benzhydrylideneamino)alkanoic acids and derivs.)  
IT 56-12-2, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(condensation of, with benzophenone deriv.)  
IT 13031-62-4  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(condensation of, with benzophenones)  
IT 1570-64-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(esterification by, of alkylbenzoyl chlorides)  
IT 21900-62-9  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(esterification of, by methylchlorophenol)  
IT 86914-73-0P 86914-76-3P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)  
IT 86914-75-2P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and condensation of, with GABA deriv.)  
IT 86914-74-1P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and condensation of, with aminobutyric acids)  
IT 16331-45-6P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and esterification of, by methylchlorophenol)  
IT 86914-35-4P 86914-36-5P 86914-37-6P 86914-38-7P 86914-39-8P  
86914-40-1P 86914-41-2P 86914-42-3P 86914-43-4P 86914-44-5P  
86914-45-6P 86914-46-7P 86914-56-9P 86914-57-0P 86914-58-1P  
86914-62-7P 86914-63-8P 86914-64-9P 86915-67-5P 86925-05-5P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)  
IT 619-64-7  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with thionyl chloride)

L7 ANSWER 44 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1984:610992 CAPLUS  
DN 101:210992  
TI Derivatives of 1-phenyl-2-piperidinopropanol and medicines containing it  
IN Wick, Alexander; Frost, Jonathan; Gaudilliere, Bernard; Bertin, Jean;  
Dupont, Regis; Rousseau, Jean  
PA Synthelabo S. A. , Fr.  
SO Fr. Demande, 53 pp.  
CODEN: FRXXBL  
DT Patent  
LA French  
IC C07D211-14; A61K031-445  
CC 27-16 (Heterocyclic Compounds (One Hetero Atom))  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	FR 2534580	A1	19840420	FR 1982-17187	19821013
	FR 2534580	B1	19850517		
	EP 109317	A2	19840523	EP 1983-401939	19831004
	EP 109317	A3	19840808		
	EP 109317	B1	19861230		
	R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
	AT 24490	E	19870115	AT 1983-401939	19831004
	ES 526381	A1	19840616	ES 1983-526381	19831011
	DK 8304705	A	19840414	DK 1983-4705	19831012
	DK 164593	B	19920720		
	DK 164593	C	19921207		
	FI 8303713	A	19840414	FI 1983-3713	19831012
	FI 77448	B	19881130		
	FI 77448	C	19890310		

NO 8303705	A	19840416	NO 1983-3705	19831012
NO 158461	B	19880606		
NO 158461	C	19880914		
AU 8320111	A1	19840419	AU 1983-20111	19831012
AU 559698	B2	19870319		
JP 59089660	A2	19840523	JP 1983-190590	19831012
JP 61058472	B4	19861211		
ZA 8307598	A	19840627	ZA 1983-7598	19831012
HU 32562	O	19840828	HU 1983-3527	19831012
HU 190509	B	19860929		
IL 69955	A1	19870130	IL 1983-69955	19831012
CA 1228855	A1	19871103	CA 1983-438856	19831012
US 4690931	A	19870901	US 1985-773926	19850909
PRAI FR 1982-17187	A	19821013		
EP 1983-401939	A	19831004		
US 1983-540648	A1	19831011		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
FR 2534580	IC IPCI IPCR	C07D211-14; A61K031-445 C07D0211-14; A61K0031-445 C07C0045-00 [I,A]; C07C0045-00 [I,C]; C07C0045-45 [I,A]; C07C0045-54 [I,A]; C07C0045-63 [I,A]; C07C0045-71 [I,A]; C07C0049-00 [I,C]; C07C0049-80 [I,A]; C07C0049-825 [I,A]; C07C0049-84 [I,A]; C07C0063-00 [I,C]; C07C0063-70 [I,A]; C07D0211-00 [I,C]; C07D0211-14 [I,A]; C07D0211-18 [I,A]; C07D0211-22 [I,A]
EP 109317	IPCI IPCR	C07D0211-14; C07D0211-18; C07D0211-22; A61K0031-445 C07C0045-00 [I,A]; C07C0045-00 [I,C]; C07C0045-45 [I,A]; C07C0045-54 [I,A]; C07C0045-63 [I,A]; C07C0045-71 [I,A]; C07C0049-00 [I,C]; C07C0049-80 [I,A]; C07C0049-825 [I,A]; C07C0049-84 [I,A]; C07C0063-00 [I,C]; C07C0063-70 [I,A]; C07D0211-00 [I,C]; C07D0211-14 [I,A]; C07D0211-18 [I,A]; C07D0211-22 [I,A]
AT 24490	IPCI	C07D0211-14 [ICM,4]; C07D0211-18 [ICS,4]; C07D0211-22 [ICS,4]; A61K0031-445 [ICS,4]
ES 526381	IPCI	C07D0211-14; A61K0031-445
DK 8304705	IPCI	C07D
FI 8303713	IPCI	C07D
NO 8303705	IPCI	C07D
AU 8320111	IPCI	C07D0211-14; C07D0211-18; C07D0211-22
JP 59089660	IPCI	C07D0211-14; A61K0031-445; C07D0211-18; C07D0211-22; C07C0049-76 [ICA]; C07C0069-76 [ICA]; C07D0211-12 [ICA]; C07D0211-28 [ICA]; C07D0211-32 [ICA]; C07D0211-62 [ICA]; C07D0213-50 [ICA]; C07D0213-78 [ICA]
ZA 8307598	IPCI	C07D; A61K
HU 32562	IPCI	C07D0211-14
IL 69955	IPCI	C07D0211-14 [ICM,4]; A61K0031-445 [ICS,4]
CA 1228855	IPCI IPCR	C07D0211-22 [ICM,4]; C07D0211-34 [ICS,4] C07C0045-00 [I,A]; C07C0045-00 [I,C]; C07C0045-45 [I,A]; C07C0045-54 [I,A]; C07C0045-63 [I,A]; C07C0045-71 [I,A]; C07C0049-00 [I,C]; C07C0049-80 [I,A]; C07C0049-825 [I,A]; C07C0049-84 [I,A]; C07C0063-00 [I,C]; C07C0063-70 [I,A]; C07D0211-00 [I,C]; C07D0211-14 [I,A]; C07D0211-18 [I,A]; C07D0211-22 [I,A]
US 4690931	IPCI IPCR	C07D0211-18 [ICM,4]; A61K0031-445 [ICS,4] C07C0045-00 [I,A]; C07C0045-00 [I,C]; C07C0045-45 [I,A]; C07C0045-54 [I,A]; C07C0045-63 [I,A]; C07C0045-71 [I,A]; C07C0049-00 [I,C]; C07C0049-80 [I,A]; C07C0049-825 [I,A]; C07C0049-84 [I,A]; C07C0063-00 [I,C]; C07C0063-70 [I,A]; C07D0211-00 [I,C]; C07D0211-14 [I,A]; C07D0211-18 [I,A]; C07D0211-22 [I,A]
	NCL	514/317.000; 546/240.000
OS	CASREACT	101:210992; MARPAT 101:210992
GI		

AB 1-Piperidineethanols I (R = H, halo, CF<sub>3</sub>, alkyl, OH, alkoxy, PhCH<sub>2</sub>O, alkanoyloxy, PhCO<sub>2</sub>, CH<sub>2</sub>OH, CONH<sub>2</sub>, carbalkoxy; R<sub>1</sub> = H, halo, alkyl, OH, alkoxy; R<sub>2</sub> = H, alkyl; R<sub>3</sub> = Me, H; R<sub>4</sub> = H, halo, alkyl, alkoxy, and R<sub>5</sub> = R<sub>6</sub> = H, or R<sub>4</sub> = R<sub>5</sub> = R<sub>6</sub> = OMe) were prepd., and they are useful as anti-ischemic agents (no \*\*\*data\*\*\*). 4-(4-Methylbenzyl)piperidine was N-alkylated by 4-HOC<sub>6</sub>H<sub>4</sub>COCHBrMe, and the N-phenylpiperidine deriv. obtained was contacted with H over Pd to give I (R = 4-OH, R<sub>1</sub> = R<sub>2</sub> = R<sub>5</sub> = R<sub>6</sub> = H, R<sub>3</sub> = R<sub>4</sub> = Me).

ST piperidineethanol phenyl prepn ischemia; phenylpiperidineethanol prepn ischemia; phenylpiperidinopropanol benzyl ischemia prepn

IT Ischemia  
(N-piperidineethanols for treatment of)

IT 392-83-6  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(Grignard coupling of, with propionyl chloride)

IT 394-47-8 403-54-3 766-84-7 873-32-5 933-88-0  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(Grignard reaction of, with Et bromide)

IT 75-03-6  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(Grignard reaction of, with benzamide deriv.)

IT 74-96-4  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(Grignard reaction of, with benzonitriles and benzoyl chlorides)

IT 92809-26-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(Prepn. and hydride redn. of)

IT 108-88-3, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(acylation of, by isonicotinoyl chloride)

IT 462-06-6  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(acylation of, by isonipecotic acid chloride deriv.)

IT 7664-41-7, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(amidation by, of (piperidinoethyl)benzoate ester deriv.)

IT 89-75-8  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(amidation of, by ammonia)

IT 70-70-2 93-55-0 5337-93-9 6285-05-8  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(bromination of)

IT 6582-42-9  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(bromination of, for N-alkylation of piperidine deriv.)

IT 95-48-7, reactions 119-36-8 367-12-4 576-26-1  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(esterification by, of propionyl chloride)

IT 79-03-8  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(esterification of, by phenols, and \*\*\*Fries\*\*\*  
\*\*\*rearrangement\*\*\* of products from)

IT 35133-39-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(hydrogenolysis of)

IT 7497-88-3P 40523-60-2P 51233-80-8P 92821-96-0P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)

IT 2447-79-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and Grignard reaction of, with Et iodide)

IT 14548-30-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and Wolff-Kishner redn. of)

IT 25519-77-1P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)



(prepn. and Wolff-Kishner redn. of, deacetylation in)  
IT 446-22-0P 455-67-4P 586-16-3P 711-33-1P 940-04-5P 2040-14-4P  
5384-09-8P 5384-11-2P 6323-18-8P 16185-96-9P 27465-51-6P  
34841-35-5P 37885-41-9P 76805-57-7P 77526-99-9P 92809-28-4P  
92821-92-6P 92821-94-8P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and bromination of)  
IT 92809-27-3P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and deprotection of)  
IT 36995-48-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and hydrogenation of)  
IT 92809-25-1P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and ketalization of, by ethylene glycol)  
IT 592-02-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and reaction of, with benzoyl chlorides)  
IT 2905-62-6P 16331-45-6P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and reaction of, with diethylcadmium)  
IT 25503-90-6P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and reaction of, with thionyl chloride)  
IT 87237-29-4P 92809-04-6P 92809-07-9P 92809-11-5P 92809-14-8P  
92809-21-7P 92809-30-8P 92809-31-9P 92809-32-0P 92809-70-6P  
92822-04-3P 92822-07-6P 92822-10-1P 92822-13-4P 92822-16-7P  
92822-19-0P 92822-22-5P 92822-27-0P 92822-30-5P 92822-34-9P  
92822-37-2P 92822-40-7P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and redn. of)  
IT 92822-01-0P 92822-02-1P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and N-alkylation of by phenacyl bromides)  
IT 74991-32-5P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and O-acylation of)  
IT 76805-33-9P 87237-30-7P 92809-05-7P 92809-06-8P 92809-08-0P  
92809-09-1P 92809-10-4P 92809-12-6P 92809-13-7P 92809-16-0P  
92809-22-8P 92809-23-9P 92809-24-0P 92809-33-1P 92809-34-2P  
92809-35-3P 92809-36-4P 92809-37-5P 92809-38-6P 92809-39-7P  
92809-40-0P 92809-41-1P 92809-42-2P 92809-43-3P 92809-44-4P  
92809-45-5P 92809-46-6P 92809-47-7P 92809-48-8P 92809-49-9P  
92809-50-2P 92809-51-3P 92809-52-4P 92809-53-5P 92809-54-6P  
92809-55-7P 92809-56-8P 92809-57-9P 92809-58-0P 92809-59-1P  
92809-60-4P 92809-61-5P 92809-62-6P 92809-63-7P 92809-64-8P  
92809-65-9P 92809-66-0P 92809-67-1P 92809-68-2P 92809-69-3P  
92809-71-7P 92809-72-8P 92809-73-9P 92809-74-0P 92816-57-4P  
92816-58-5P 92821-83-5P 92821-95-9P 92822-03-2P 92822-05-4P  
92822-06-5P 92822-09-8P 92822-11-2P 92822-12-3P 92822-14-5P  
92822-15-6P 92822-17-8P 92822-18-9P 92822-20-3P 92822-21-4P  
92822-23-6P 92822-24-7P 92822-28-1P 92822-29-2P 92822-31-6P  
92822-32-7P 92822-35-0P 92822-36-1P 92822-38-3P 92822-39-4P  
92822-41-8P 92822-42-9P 93066-46-7P 93109-39-8P 93174-92-6P  
95728-57-7P 103175-61-7P 104384-69-2P 136089-79-7P 168137-20-0P  
168137-50-6P 186036-09-9P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)  
IT 329-15-7P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. of Grignard reaction of, with Et bromide)

IT 59084-16-1P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of, for acylation of fluorobenzene)

IT 39178-35-3P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of, for acylation of toluene)

IT 1451-82-7P 1451-84-9P 2114-00-3P 27475-16-7P 34911-51-8P  
 53946-87-5P 75815-22-4P 92809-29-5P 92821-89-1P 92821-91-5P  
 92821-99-3P 100125-88-0P 104008-40-4P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of, for N-alkylation of piperidine deriv.)

IT 877-37-2P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of, for N-alkylation of piperidines)

IT 6613-44-1  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with diethylcadmium)

IT 51-36-5 55-22-1, reactions 455-24-3 619-64-7  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with thionyl chloride)

IT 498-94-2  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (N-acetylation of)

IT 37581-26-3  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (N-alkylation of, by phenacyl bromide deriv.)

IT 31252-42-3  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (N-alkylation of, by phenacyl bromides)

IT 536-38-9 1835-05-8 111000-54-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (N-alkylation of, by piperidine deriv.)

IT 98-88-4 112-67-4  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (O-acylation by, of hydroxypropiophenone deriv.)

IT 77-78-1  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (O-alkylation by, of hydroxypropiophenone deriv.)

IT 74991-36-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (O-methylation of)

L7 ANSWER 45 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1984:491574 CAPLUS  
 DN 101:91574  
 ED Entered STN: 15 Sep 1984  
 TI Experimental approach to evaluating environmental degradation mechanisms  
 in bisphenol A polycarbonate films on metallic substrates  
 AU Webb, J. D.  
 CS Solar Energy Res. Inst., Golden, CO, USA  
 SO Report (1983), SERI/TR-255-1602; Order No. DE84000025, 119 pp. Avail.:  
 NTIS  
 From: Energy Res. Abstr. 1984, 9(6), Abstr. No. 9724  
 DT Report  
 LA English  
 CC 35-8 (Chemistry of Synthetic High Polymers)  
 AB A chamber for controlling the environment was used with a  
 Fourier-transform IR spectrometer in the study of the degrdn. of a  
 bisphenol A polycarbonate [24936-68-3] film on a metal. The IR spectra  
 were detd. during exposure to UV radiation, gases, and temp. variations.  
 The concns. of functional groups and reaction products in the polymer were  
 detd. from IR spectra. Information from UV and IR spectra and gel  
 permeation chromatog. (mol. wt. \*\*\*data\*\*\* ) was used to identify  
 several degrdn. pathways. The major mechanisms, in order of importance,  
 appeared to involve first and second photo- \*\*\*Fries\*\*\*  
 \*\*\*rearrangements\*\*\* at carbonyl groups and chain scission at carbonyl  
 groups. The quantum yield of the first photo-Fries reaction product was  
 0.020 +/- 0.004. Some evidence of photooxidn. of Me groups was obsd.  
 The technique should be applicable to the study of surface and interfacial  
 degrdn., esp. with polymer film thickness 0.1-1.0 .mu..  
 ST bisphenol polycarbonate environmental degrdn; degrdn mechanism  
 polycarbonate film; IR degrdn mechanism polycarbonate

IT Polycarbonates  
 RL: PRP (Properties)  
 (degrdn. mechanism of, in controlled environment, IR spectra in study of)

IT Polymer degradation  
 (environmental, of polycarbonate on metal, mechanism of, IR spectra in study of)

IT 24936-68-3, reactions 25037-45-0  
 RL: PRP (Properties)  
 (degrdn. mechanism of, on metal, in controlled environment, IR spectra in study of)

L7 ANSWER 46 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1984:407019 CAPLUS  
 DN 101:7019  
 ED Entered STN: 07 Jul 1984  
 TI Benzofuranone derivatives  
 IN Baker, Stephen Richard; Ross, William James; Jamieson, William Baffey  
 PA Lilly Industries Ltd., UK  
 SO Rom., 9 pp.  
 CODEN: RUXXA3  
 DT Patent  
 LA Romanian  
 IC C07D907-88  
 CC 27-7 (Heterocyclic Compounds (One Hetero Atom))  
 Section cross-reference(s): 63

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	RO 79685	P	19820817	RO 1979-98880	19791008
	GB 2131688	A1	19840627	GB 1982-34669	19821204
PRAI	RO 1979-98880		19791008		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
RO 79685	IC	C07D907-88
	IPCI	C07D0907-88
GB 2131688	IPCI	A61K0031-34
	IPCR	A61K0031-34 [I,A]; A61K0031-34 [I,C]

OS MARPAT 101:7019  
 GI

/ Structure 20 in file .gra /

AB Aurone derivs. I (R, R1, R2, R3, R4, and R5 are H, halo, alkyl, alkoxy, cycloalkyl, Ph, NH2, cyano, OH, NO2, alkenyl, CO2H, 5-tetrazolyl, CH:CHCO2H), useful in the treatment of allergy (no \*\*\*data\*\*\* ), were prepd. 5-Methoxybenzofuran-3(2H)-one was heated with 3-HCOC6H4CO2H and HCl in dioxane to give I (R = 5-OMe, R3 = 3-CO2H, R1 = R2 = R4 = R5 = H).

ST benzylidenebenzofuranone prepn allergy; benzofuranone benzylidene prepn allergy; aurone prepn allergy

IT Allergy  
 (benzofuranone derivs. in treatment of)

IT Condensation reaction  
 (of benzofuranones with benzaldehydes)

IT 24262-66-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 ( \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)

IT 1131-60-8  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (acetylation of)

IT 75-36-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (acylation by, of phenol deriv.)

IT 57009-12-8  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (bromination of, and cyclization of)

IT 19278-81-0 90379-99-0  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (condensation of, with benzaldehyde deriv.)

IT 3260-78-4 3261-05-0 6272-26-0 7169-34-8 15832-09-4 20895-41-4  
 39581-55-0 54120-66-0 58645-78-6 74815-18-2 74815-20-6  
 74815-34-2  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (condensation of, with benzaldehydes)

IT 86-81-7 100-10-7 100-52-7, reactions 104-88-1, reactions 122-85-0  
 123-11-5, reactions 454-89-7 1200-14-2 1424-66-4 24964-64-5  
 74815-33-1  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (condensation of, with benzofuranone deriv.)

IT 119-67-5 616-76-2 619-21-6 619-66-9 74815-17-1  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (condensation of, with benzofuranones)

IT 16357-40-7P 55168-33-7P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and bromination of)

IT 71620-34-3P 74815-19-3P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and condensation of, with benzaldehyde deriv.)

IT 74815-32-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and condensation of, with benzaldehydes)

IT 74815-22-8P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and condensation of, with benzofuranones)

IT 74815-30-8P 74815-31-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and cyclization of)

IT 90379-98-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and reaction of, with silyl azide deriv.)

IT 66885-68-5P 74814-56-5P 74814-57-6P 74814-58-7P 74814-59-8P  
 74814-60-1P 74814-61-2P 74814-62-3P 74814-63-4P 74814-64-5P  
 74814-65-6P 74814-66-7P 74814-67-8P 74814-68-9P 74814-69-0P  
 74814-70-3P 74814-71-4P 74814-72-5P 74814-73-6P 74814-74-7P  
 74814-75-8P 74814-76-9P 74814-77-0P 74814-78-1P 74814-79-2P  
 74814-80-5P 74814-81-6P 74814-82-7P 74814-83-8P 74814-84-9P  
 74814-85-0P 74814-86-1P 74814-87-2P 74814-88-3P 74814-89-4P  
 74814-90-7P 74814-91-8P 74814-92-9P 74814-97-4P 74814-98-5P  
 74814-99-6P 74815-00-2P 74815-01-3P 74815-02-4P 74815-03-5P  
 74815-04-6P 74815-05-7P 74815-06-8P 74815-07-9P 74815-08-0P  
 74815-10-4P 74815-11-5P 74815-13-7P 74815-14-8P 74825-86-8P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)

IT 105-07-7  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with sodium azide)

L7 ANSWER 47 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1984:85584 CAPLUS  
 DN 100:85584  
 ED Entered STN: 12 May 1984  
 TI 7-Alkoxybenzofurans, their intermediates, and their furochromones  
 IN Gammill, Ronald Bruce  
 PA Upjohn Co. , USA  
 SO Eur. Pat. Appl., 20 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 IC C07D307-86; C07D493-04  
 ICA A61K031-35  
 ICI C07D493-04, C07D311-00, C07D309-00  
 CC 27-7 (Heterocyclic Compounds (One Hetero Atom))  
 Section cross-reference(s): 1, 28

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	EP 94769	A1	19831123	EP 1983-302551	19830505
	EP 94769	B1	19861126		

R: BE, CH, DE, FR, GB, IT, LI, NL, SE	
US 4459420	A 19840710 US 1982-378686 19820517
JP 58213772	A2 19831212 JP 1983-84865 19830513
JP 04078635	B4 19921211
US 4614809	A 19860930 US 1984-603533 19840425
US 4820851	A 19890411 US 1986-885365 19860714
JP 04352777	A2 19921207 JP 1991-210796 19910822
JP 05043703	B4 19930702
JP 04352778	A2 19921207 JP 1991-210797 19910822
JP 04352779	A2 19921207 JP 1991-210798 19910822
JP 05001071	A2 19930108 JP 1991-210800 19910822
PRAI US 1982-378686	A 19820517
US 1984-603533	A3 19840425

# CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 94769	IC	C07D307-86; C07D493-04
	ICA	A61K031-35
	ICI	C07D493-04, C07D311-00, C07D309-00
	IPCI	C07D0307-86; C07D0493-04; A61K0031-35 [ICA]; C07D0493-04 [ICI]; C07D0311-00 [ICI]; C07D0309-00 [ICI]
	IPCR	C07D0307-00 [I,C]; C07D0307-86 [I,A]; C07D0493-00 [I,C]; C07D0493-04 [I,A]
US 4459420	IPCI	C07D0307-79
	IPCR	C07D0307-00 [I,C]; C07D0307-86 [I,A]; C07D0493-00 [I,C]; C07D0493-04 [I,A]
JP 58213772	NCL	549/471.000; 549/387.000; 549/470.000
	IPCI	C07D0307-86; C07D0493-04; A61K0031-34 [ICA]; A61K0031-35 [ICA]
US 4614809	IPCI	C07D0311-78 [ICM,4]
	IPCR	C07D0307-00 [I,C]; C07D0307-86 [I,A]; C07D0493-00 [I,C]; C07D0493-04 [I,A]
US 4820851	NCL	549/387.000
	IPCI	C07D0307-86 [ICM,4]
	IPCR	C07D0307-00 [I,C]; C07D0307-86 [I,A]; C07D0493-00 [I,C]; C07D0493-04 [I,A]
JP 04352777	NCL	549/462.000; 549/471.000
	IPCI	C07D0307-86 [ICM,5]; A61K0031-34 [ICA,5]; A61K0031-35 [ICA,5]; C07D0493-04 [ICA,5]
JP 04352778	IPCI	C07D0307-86 [ICM,5]; A61K0031-34 [ICA,5]; A61K0031-35 [ICA,5]; C07D0493-04 [ICA,5]
JP 04352779	IPCI	C07D0307-86 [ICM,5]; A61K0031-34 [ICA,5]; A61K0031-35 [ICA,5]; C07D0493-04 [ICA,5]
JP 05001071	IPCI	C07D0493-04 [ICM,5]; A61K0031-35 [ICS,5]
OS	CASREACT 100:85584	
GI		

/ Structure 21 in file .gra /

AB 5-Acetyl-7-alkoxy-6-hydroxybenzofurans were treated with oxidizing agents and alkanols to yield 4,9-dialkoxy compds. I (R, R1 = alkyl), which were used in the prepn. of furochromones II (R2, R3 = alkyl), useful as antiatherosclerotic agents (no \*\*\*data\*\*\* ). Thus, 5-acetyl-7-ethoxy-6-hydroxybenzofuran was treated with MeOH and Tl(NO3)3 to give I (R = Et, R1 = Me), and the latter was heated with MeSCH2CO2Et and NaH to give II (R2 = Et, R3 = Me).

ST furochromone prepn antiatherosclerotic

IT Atherosclerosis

(inhibitors of, furochromones as)

IT 107-14-2

RL: RCT (Reactant); RACT (Reactant or reagent)

(acylation by, of pyrogallol)

IT 87-66-1

RL: RCT (Reactant); RACT (Reactant or reagent)

(acylation of)

IT 4455-13-4

RL: RCT (Reactant); RACT (Reactant or reagent)

(cyclocondensation of, with acetylbenzofuranols)

IT 74-88-4, reactions 75-03-6

RL: RCT (Reactant); RACT (Reactant or reagent)

(etherification by, of hydroxybenzofuran deriv.)

IT 68123-32-0P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)

IT 17345-68-5P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and cyclization of, benzofuran deriv. from)

IT 88897-94-3P 88897-96-5P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and dehydrogenation of)

IT 88897-88-5P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and etherification of, by Et iodide)

IT 88897-95-4P 88897-97-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and methoxylation of)

IT 76301-19-4P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and selective demethylation of)

IT 88897-93-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and selective etherification of)

IT 68123-31-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and selective hydrogenation of)

IT 484-51-5P 75884-10-5P 88349-48-8P 88897-89-6P 88897-98-7P 88897-99-8P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)

L7 ANSWER 48 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1982:562572 CAPLUS  
 DN 97:162572  
 ED Entered STN: 12 May 1984  
 TI 1,2-Diphenylethane derivatives  
 IN Chan, Rosalind Po Kuen  
 PA Biorex Laboratories Ltd., UK  
 SO Brit. UK Pat. Appl., 5 pp.  
 CODEN: BAXXDU  
 DT Patent  
 LA English  
 IC C07C069-21; C07C039-06; A61K031-12; A61K031-22; A61K031-055; C07C049-245  
 CC 25-10 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)  
 Section cross-reference(s): 63

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 2087877	A	19820603	GB 1981-33014	19811102
	GB 2087877	B2	19840523		
	US 4427697	A	19840124	US 1981-321931	19811116
PRAI	GB 1980-36921	A	19801118		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
GB 2087877	IC	C07C069-21; C07C039-06; A61K031-12; A61K031-22; A61K031-055; C07C049-245
	IPCI	C07C0069-21; C07C0039-06; A61K0031-12; A61K0031-22; A61K0031-055; C07C0049-245
	IPCR	C07C0037-00 [I,C]; C07C0037-50 [I,A]; C07C0037-56 [I,A]; C07C0039-00 [I,C]; C07C0039-15 [I,A]; C07C0039-367 [I,A]; C07C0045-00 [I,C]; C07C0045-46 [I,A]; C07C0045-54 [I,A]; C07C0045-67 [I,A]; C07C0049-00 [I,C]; C07C0049-83 [I,A]; C07C0049-84 [I,A]
US 4427697	IPCI	C07C0039-16; C07C0049-813; C07C0069-21; A61K0031-055;

A61K0031-05; A61K0031-12; A61K0031-22  
 IPCR C07C0037-00 [I,C]; C07C0037-50 [I,A]; C07C0037-56  
 [I,A]; C07C0039-00 [I,C]; C07C0039-15 [I,A];  
 C07C0039-367 [I,A]; C07C0045-00 [I,C]; C07C0045-46  
 [I,A]; C07C0045-54 [I,A]; C07C0045-67 [I,A];  
 C07C0049-00 [I,C]; C07C0049-83 [I,A]; C07C0049-84 [I,A]  
 NCL 514/546.000; 514/548.000; 514/685.000; 514/721.000;  
 514/734.000; 514/735.000; 560/138.000; 568/331.000;  
 568/729.000

OS MARPAT 97:162572  
 GI

/ Structure 22 in file .gra /

AB Dihydrostilbestrols I [R and R6 (same or different) are acyl, OH, acyloxy;  
 R1 and R5 (same or different) are OH, acyloxy, alkoxy; R2 = H, halo; R3  
 and R4 (same or different) are alkyl, haloalkyl], useful as  
 anti-estrogenic agents (no \*\*\*data\*\*\*, a formulation is given), were  
 prepd. I (R = R6 = H, R1 = R5 = OH, R2 = F, R3 = Et, R4 = Me) was  
 O-acylated by Ac2O, and the product was heated with AlCl3 to give I (R =  
 R6 = Ac, R1 = R5 = OH, R2 = F, R3 = Et, R4 = Me).

ST stilbestrol dihydro prepn antiestrogenic; hydrostilbestrol prepn  
 antiestrogenic; antiestrogenic dihydrostilbestrol prepn

IT Estrogens

RL: USES (Uses)

(inhibitors, dihydrostilbestrols as)

IT 54043-48-0

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (acetylation of)

IT 75-36-5

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (acylation of dihydrostilbestrol deriv. by)

IT 79295-64-0P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)

(prepn. and \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)

IT 79295-62-8P 79295-63-9P 83282-71-7P 83282-72-8P 83282-73-9P  
 83282-74-0P

RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)

IT 34633-34-6

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (O-acetylation of)

L7 ANSWER 49 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1982:472274 CAPLUS

DN 97:72274

ED Entered STN: 12 May 1984

TI Reaction of ethyl .beta.-alkylaminocrotonates in the presence of organic acid

AU Yamato, Masatoshi; Sato, Koichi; Hashigaki, Kuniko; Ninomiya, Mayumi

CS Fac. Pharm. Sci., Okayama Univ., Okayama, 700, Japan

SO Heterocycles (1982), 19(7), 1263-8

CODEN: HTCYAM; ISSN: 0385-5414

DT Journal

LA English

CC 28-2 (Heterocyclic Compounds (More Than One Hetero Atom))

OS CASREACT 97:72274

AB Condensation of Et .beta.-alkylaminocrotonates, obtained from MeCOCH2CO2Et  
 and amines, in the presence of HSCH2CH2CO2H gave 1,6-naphthyridine-2,5-  
 dione derivs. The structures of these compds. were detd. on the basis of  
 chem. reactivities and spectral \*\*\*data\*\*\*.

ST aminocrotonate cyclocondensation mercaptopropionate; naphthyridinedione

IT Cyclocondensation reaction

(of aminocrotonates in presence of mercaptopropionic acid,  
 naphthyridinediones from)

IT 58346-48-8

RL: PRP (Properties)

(NMR of)

IT 107-96-0  
RL: PROC (Process)  
(cyclocondensation of aminocrotonates in presence of)

IT 1020-67-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(cyclocondensation of, in presence of mercaptopropionic acid)

IT 82616-42-0P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)

IT 82616-40-8P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and acetylation of)

IT 82616-45-3P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and chlorination of)

IT 870-85-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and cyclocondensation of, in presence of mercaptopropionate)

IT 82616-47-5P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and dehydrogenation of)

IT 82616-44-2P 82616-46-4P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and hydrogenolysis of)

IT 82616-43-1P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and methylation of)

IT 82616-41-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and redn. of)

IT 7202-55-3P 26162-40-3P 73219-40-6P 82616-48-6P 82623-31-2P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

IT 74-89-5, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with acetoacetate)

IT 141-97-9  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with methylamine)

L7 ANSWER 50 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1982:142023 CAPLUS  
DN 96:142023  
ED Entered STN: 12 May 1984  
TI Transient intermediates in the photo-Fries isomerization of phenyl acetate  
via spontaneous Raman spectroscopy  
AU Beck, S. M.; Brus, L. E.  
CS Bell Lab., Murray Hill, NJ, 07974, USA  
SO Journal of the American Chemical Society (1982), 104(7), 1805-8  
CODEN: JACSAT; ISSN: 0002-7863  
DT Journal  
LA English  
CC 22-6 (Physical Organic Chemistry)  
AB Ns time-resolved 416- and 395-nm Raman spectroscopy is used to observe  
intermediate species in the soln.-phase unimol. isomerization and  
fragmentation of PhOAc. In aq. solvent both fundamental and overtone  
vibrations are obsd., while in MeOH, CCl4, and HOCH2CH2OH only overtones  
are examd. The time evolution and solvent dependence of the spectra allow  
resoln. of 3 species: PhO.bul. and (apparently) o- and  
p-acetylcyclohexadienones. These \*\*\*data\*\*\* support a caged-radical,  
photo-Fries mechanism. However, the relative yields do not correlate with  
bulk viscosity.

ST Fries isomerization photochem phenyl acetate; Raman Fries isomerization



fragmentation mechanism  
 IT Raman spectra (photochem. \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* mechanism in relation to)  
 IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* (photochem., of Ph acetate, mechanism of, Raman spectroscopy in relation to)  
 IT 108-95-2P, properties 637-27-4P  
 RL: PRP (Properties); PREP (Preparation)  
 (formation and Raman spectrum of, in photo-Fries isomerization of Ph acetate)  
 IT 2122-46-5 80753-89-5 80753-90-8  
 RL: PRP (Properties)  
 (intermediate, in photochem. \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of Ph acetate)  
 IT 122-79-2  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (photochem. \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of, mechanism of)

L7 ANSWER 51 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1982:68608 CAPLUS  
 DN 96:68608  
 ED Entered STN: 12 May 1984  
 TI 5-(2',4'-Difluorophenyl)-2-hydroxybenzoic acid  
 IN Sallares Rosell, Juan; Duran Escriba, Albert; Fernandez Guerra, Eugenio  
 PA Centro de Investigacion Farmaceutica S. A., Spain  
 SO Span., 9 pp.  
 CODEN: SPXXAD  
 DT Patent  
 LA Spanish  
 IC C07C065-105; A61K031-19  
 CC 25-17 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	ES 494242	A1	19810801	ES 1980-494242	19800814
PRAI	ES 1980-494242	A1	19800814		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
ES 494242	IC	C07C065-105; A61K031-19
	IPCI	C07C0065-105; A61K0031-19

GI

/ Structure 23 in file .gra /

AB The title compd. (I; R = 2,4-F2C6H3) was prepd. from 4-RC6H4OAc by  
 \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* at 120-60.degree. using AlCl3  
 catalyst in C2H2Cl4, following by oxidn. of the acetyl group with iodine  
 in pyridine. I has analgesic, antiinflammatory, and antipyretic  
 activities (no \*\*\*data\*\*\* ).  
 ST salicylic acid difluorophenyl  
 IT 367-25-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (phenylation of)  
 IT 53591-79-0P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and Baeyer-Villiger oxidn. of)  
 IT 59089-67-7P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)  
 IT 37847-52-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and acetylation of)  
 IT 80654-00-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)

(prepn. and oxidn. of)  
IT 22494-42-4P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)  
IT 71-43-2, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with difluorobenzenediazonium ion)

L7 ANSWER 52 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1981:103151 CAPLUS  
DN 94:103151  
ED Entered STN: 12 May 1984  
TI Thenoylphenoxyacetic acid esters  
IN Liebenow, Walter; Mannhardt, Karl  
PA Heumann, Ludwig, und Co. G.m.b.H., Fed. Rep. Ger.  
SO Ger., 6 pp.  
CODEN: GWXXAW  
DT Patent  
LA German  
IC C07D333-22; A61K031-38  
CC 27-8 (Heterocyclic Compounds (One Hetero Atom))  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2916980	B1	19800918	DE 1979-2916980	19790426
	DE 2916980	C2	19810619		
PRAI	DE 1979-2916980	A	19790426		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
DE 2916980	IC	C07D333-22; A61K031-38
	IPCI	C07D0333-22; A61K0031-38
	IPCR	C07D0333-00 [I,C]; C07D0333-22 [I,A]; C07D0333-38 [I,A]

OS CASREACT 94:103151  
GI

/ Structure 24 in file .gra /

AB The title acetates I (R1, R2 = halo, alkyl, alkoxy; R3 = H, alkyl, hydroxyalkyl, alkoxyalkyl), useful as diuretics with gastrointestinal effects (no \*\*\*data\*\*\*), were prepd. Thus, phenoxyacetate I (R1 = R2 = Cl, R3 = H) was prepd. in 5 steps from 3,4,2-Cl2(HO)C6H2CO2Me and 2-thenoyl chloride via thiophenecarboxylate II, \*\*\*Fries\*\*\*  
\*\*\*rearrangement\*\*\* to thenoylsalicylate III (R4 = Me, R5 = H), salicylic acid III (R4 = R5 = H), and phenoxyacetate III (R4 = H, R5 = CH2CO2Me).

ST diuretic thenoylphenoxyacetate prepn; phenoxyacetate thenoyl diuretic prepn; acetate thenoylphenoxy diuretic prepn

IT Diuretics  
(thenoylphenoxyacetate esters)

IT 96-34-4  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(condensation of, with thenoylphenol deriv.)

IT 76732-99-5 76733-00-1 76733-01-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(decarboxylation of)

IT 76732-94-0P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)

IT 76732-97-3P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and decarboxylation and condensation of, with chloroacetate ester)

IT 76732-98-4P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and decarboxylation of)

IT 76732-96-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

(Reactant or reagent)  
 (prepn. and sapon. of)  
 IT 76732-90-6P 76732-91-7P 76732-92-8P 76732-93-9P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)  
 IT 5271-67-0  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (O-acylation of salicylate ester)  
 IT 76732-95-1  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (O-acylation of, with thenoyl chloride)

L7 ANSWER 53 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1978:508476 CAPLUS  
 DN 89:108476  
 ED Entered STN: 12 May 1984  
 TI Studies on Fries reaction. Part II. Preparation of hydroxy keto sulfones  
 AU Undavia, N. K.; Dhanani, M. L.; Thaker, K. A.  
 CS Dep. Chem., Saurasha Univ., Bhavanagar, India  
 SO Journal of the Institution of Chemists (India) (1978), 50(1), 38-40  
 CODEN: JOICA7; ISSN: 0020-3254  
 DT Journal  
 LA English  
 CC 25-12 (Noncondensed Aromatic Compounds)  
 Section cross-reference(s): 1  
 GI

/ Structure 25 in file .gra /

AB Ph arenesulfonates I (R = Ph, p-tolyl, 4-halophenyl, 4-MeOC<sub>6</sub>H<sub>4</sub>, naphthyl)  
 were heated with AlCl<sub>3</sub> to give the resp. sulfones II, useful as  
 bactericides (no \*\*\*data\*\*\*). I were prepd. from RSO<sub>2</sub>Cl and  
 4-EtCOC<sub>6</sub>H<sub>4</sub>OH.  
 ST \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* phenyl benzenesulfonate; sulfone  
 hydroxyphenyl phenyl; hydroxyphenyl sulfone prepn bactericide  
 IT Bactericides, Disinfectants and Antiseptics  
 (2-hydroxyphenyl Ph sulfones)  
 IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 (of 4-propionylphenyl benzenesulfonates)  
 IT 70-70-2  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (esterification of benzenesulfonyl chlorides by)  
 IT 85-46-1 93-11-8 98-09-9 98-58-8 98-59-9 98-61-3 98-68-0  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (esterification of, by 4-hydroxypropiophenone)  
 IT 67474-05-9P 67474-06-0P 67474-07-1P 67474-08-2P 67474-09-3P  
 67474-10-6P 67474-11-7P 67474-12-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)  
 IT 98-60-2P 67474-13-9P 67474-14-0P 67474-15-1P 67474-16-2P  
 67474-17-3P 67474-18-4P 67474-19-5P 67474-20-8P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)

L7 ANSWER 54 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1978:50046 CAPLUS  
 DN 88:50046  
 ED Entered STN: 12 May 1984  
 TI MO-calculations of the energy transfer activities of organic  
 .pi.-structures in the photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*. II.  
 Selection of sensitizers and inhibitors of the photo-Fries reaction based  
 on theoretical absorption and fluorescence \*\*\*data\*\*\*  
 AU Mehlhorn, A.; Schwenzer, B.; Schwetlick, K.  
 CS Sek. Chem., Tech. Univ., Dresden, Ger. Dem. Rep.  
 SO Tetrahedron (1977), 33(12), 1489-91  
 CODEN: TETRAB; ISSN: 0040-4020  
 DT Journal

LA English  
 CC 22-8 (Physical Organic Chemistry)  
 AB Based on quantum chem. PPP calcns. of the absorption and fluorescence max. for org. .pi.-systems, 26 org. mols. were assigned as inhibitors or sensitizers in the photochem. \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 The consideration also involves .pi.-systems which can influence the reaction due to their higher excited singlet states. The results obtained agree with exptl. \*\*\*data\*\*\* and allow prediction of types of structures which should act as energy donors or acceptors in the photochem. Fries reaction.

ST \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* photochem sensitizer inhibitor;  
 fluorescence org pi system  
 IT Fluorescence  
 (of org. .pi.-systems)  
 IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 (photochem., of phenylurethane, sensitizers and inhibitors for)

IT 66-71-7 69-72-7, uses and miscellaneous 86-74-8 90-02-8, uses and miscellaneous 91-22-5, uses and miscellaneous 92-70-6 92-84-2  
 117-99-7 118-92-3 119-65-3 123-30-8 132-64-9 132-65-0 135-67-1  
 147-93-3 260-50-4 262-20-4 289-67-8 835-64-3 2963-66-8  
 3411-95-8 42901-70-2  
 RL: USES (Uses)  
 (inhibitor, for photochem. \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of phenylurethane)

IT 101-99-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (photochem. \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of, sensitizers and inhibitors for)

IT 71-43-2, uses and miscellaneous 108-90-7, uses and miscellaneous  
 110-86-1, uses and miscellaneous  
 RL: USES (Uses)  
 (sensitizer, for photochem. Fries reaction of phenylurethane)

IT 288-47-1  
 RL: PRP (Properties)  
 (sensitizer, for photochem. Fries reaction of phenylurethane)

L7 ANSWER 55 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1977:568029 CAPLUS  
 DN 87:168029  
 ED Entered STN: 12 May 1984  
 TI 4,5-Dihydro-6-methyl-4-oxo-1-phenyl-1H-pyrazolo[4,3-c]pyridine-3-carboxylic acid  
 IN Motokuni, Ryuji; Tanaka, Motoaki; Hashimoto, Sadao; Suzue, Takashi  
 PA Taiho Yakuhin Kogyo K. K., Japan  
 SO Jpn. Kokai Tokkyo Koho, 9 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC C07D471-04  
 CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))  
 Section cross-reference(s): 27

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 52078895	A2	19770702	JP 1975-157933	19751225
	JP 58014437	B4	19830318		
PRAI	JP 1975-157933	A	19751225		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 52078895	IC	C07D471-04
	IPCI	C07D0471-04; A61K0031-435 [ICA]; C07D0471-04 [ICI]; C07D0221-00 [ICI]; C07D0231-00 [ICI]

GI

/ Structure 26 in file .gra /

AB The title compd. (I) was prepd. by oxidn. of II. Thus, 3.4 g KMnO4 was added to 1.7 g II in AcOH and the mixt. stirred 30 min at room temp. to give 0.9 g I. II was prepd. from 4-(2-furylcarbonyloxy)-6-methyl-2-

pyrone. I had analgesic, antiinflammatory, and antibacterial activities  
(no \*\*\*data\*\*\* ).

ST bactericide pyrazolopyridinecarboxylic acid; antiinflammatory  
pyrazolopyridinecarboxylic acid; analgesic pyrazolopyridinecarboxylic  
acid; pyrazolopyridinecarboxylic acid oxophenyl; oxidn  
furylpyrazolopyridine

IT Analgesics  
Bactericides, Disinfectants and Antiseptics  
Inflammation inhibitors  
(pyrazolopyridinecarboxylic acid)

IT Oxidation  
(permanganate, of furylpyrazolopyridne by, pyrazolopyridinecarboxylic  
acids from)

IT 64490-01-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
( \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)

IT 64679-30-7P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and cyclization of, by dehydration, pyranopyrazole from)

IT 64490-00-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and oxidn. of)

IT 64489-99-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and reaction with ammonia, pyrazolopyridine deriv. from)

IT 64489-98-1P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and reaction with phenylhydrazine)

IT 64687-73-6P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

L7 ANSWER 56 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1977:567650 CAPLUS  
DN 87:167650  
ED Entered STN: 12 May 1984  
TI Studies on Fries reaction: preparation of hydroxy ketosulfones  
AU Undavia, N. K.; Dhanain, M. L.; Thaker, K. A.  
CS Dep. Chem., Saurashtra Univ., Bhavanagar, India  
SO Journal of the Institution of Chemists (India) (1977), 49,Pt.2, 109-11  
CODEN: JOICA7; ISSN: 0020-3254  
DT Journal  
LA English  
CC 25-13 (Noncondensed Aromatic Compounds)  
GI

/ Structure 27 in file .gra /

AB MeCOC6H4OH-4 with RSO2Cl (R = Ph, MeC6H4, BrC6H4, naphthyl, etc.) gave  
MeCOC6H4OSO2R (8 compds.) which on \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
catalyzed by AlCl3 gave I, useful as bactericides (no \*\*\*data\*\*\* ).

ST hydroxyacetophenone arenesulfonate \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
; phenylsulfonylacetophenone deriv bactericide

IT Bactericides, Disinfectants and Antiseptics  
(arenesulfonylhydroxyacetophene)

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
(of hydroxyacetophenone arenesulfonate esters)

IT 98-09-9 98-58-8 98-59-9 98-60-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(esterification of 4-hydroxyacetophenone by)

IT 85-46-1 93-11-8 98-61-3 98-68-0  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(esterification of hydroxyacetophenone by)

IT 99-93-4  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(esterification of, with arenesulfonyl chlorides)

IT 64101-66-2P 64101-67-3P 64101-68-4P 64101-69-5P 64101-70-8P  
 64101-71-9P 64101-72-0P 64101-73-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of, bactericide by)  
 IT 64101-74-2P 64101-75-3P 64101-76-4P 64101-77-5P 64101-78-6P  
 64101-79-7P 64101-80-0P 64101-81-1P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of, for use as bactericide)

L7 ANSWER 57 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1977:534332 CAPLUS  
 DN 87:134332  
 ED Entered STN: 12 May 1984  
 TI Moss constituents. Part 19. Synthesis of lunularic acid  
 AU Huneck, Siegfried; Schreiber, Klaus  
 CS Inst. Biochem. Pflanzen, DAW, Halle/Saale, Ger. Dem. Rep.  
 SO Phytochemistry (Elsevier) (1977), 16(7), 1013-16  
 CODEN: PYTCAS; ISSN: 0031-9422  
 DT Journal  
 LA German  
 CC 25-17 (Noncondensed Aromatic Compounds)  
 Section cross-reference(s): 22  
 AB A ten-step synthesis of lunularic acid, starting from Ph  
 .beta.-chloropropionate is described. Detailed spectroscopic \*\*\*data\*\*\*  
 are given for lunularic acid and derivs. for the first time.  
 ST lunularic acid prepn spectra  
 IT Infrared spectra  
 Mass spectra  
 Nuclear magnetic resonance  
 Ultraviolet and visible spectra  
 (of lunularic acid and its derivs.)  
 IT 625-36-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (esterification of phenol with)  
 IT 108-95-2, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (esterification of, with chloropropionyl chloride)  
 IT 63897-99-4  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (oxidn. of, with hydrogen peroxide)  
 IT 24552-27-0P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)  
 IT 36640-12-7P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and hydrogenation of)  
 IT 6968-35-0P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and methylation of)  
 IT 34985-41-6P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and oximation of)  
 IT 1137-31-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and reaction of, with anisole)  
 IT 23255-59-6P 63898-00-0P 63898-01-1P 63898-02-2P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and spectra of)  
 IT 63897-98-3P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of, ion conversion to diketone)  
 IT 36640-14-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn., demethylation, and spectra of)  
 IT 100-66-3, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with methoxyhomophthalic acid)

L7 ANSWER 58 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1977:106471 CAPLUS  
DN 86:106471  
ED Entered STN: 12 May 1984  
TI Photochemical reactions. Part 91. Photochemistry of imidazolides. I.  
The photo- \*\*\*Fries\*\*\* -type \*\*\*rearrangement\*\*\* of N-substituted  
imidazoles  
AU Iwasaki, Shigeo  
CS Org.-Chem. Lab., ETH, Zurich, Switz.  
SO Helvetica Chimica Acta (1976), 59(8), 2738-52  
CODEN: HCACAV; ISSN: 0018-019X  
DT Journal  
LA English  
CC 28-10 (Heterocyclic Compounds (More Than One Hetero Atom))  
GI

/ Structure 28 in file .gra /

AB Imidazoles I (R = Ac, Me(CH<sub>2</sub>)<sub>6</sub>CO, cyclohexylcarbonyl, Me<sub>3</sub>CCO, Bz,  
Me<sub>2</sub>C:CHCO, MeO<sub>2</sub>C, Et<sub>2</sub>NCO, PhCH<sub>2</sub>) underwent photochem. rearrangements to  
give 8-45% II and 10-35% III. The structures of II and III were confirmed  
by spectral \*\*\*data\*\*\*, which are reported.  
ST acylimidazole photochem rearrangement; imidazole acyl photochem  
rearrangement; spectra acylimidazole  
IT Spectra  
(of acylimidazoles)  
IT Rearrangement  
(photochem., of N-acylimidazoles)  
IT 288-32-4, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(acylation of)  
IT 4238-72-6P 14700-62-0P 17325-26-7P 17334-09-7P 38353-02-5P  
53981-69-4P 61985-25-9P 61985-26-0P 61985-27-1P 61985-28-2P  
61985-29-3P 61985-30-6P 61985-31-7P 61985-32-8P 61985-33-9P  
61985-34-0P 61985-35-1P 61985-36-2P  
RL: PREP (Preparation)  
(by photochem. rearrangement of 1-acyl analog)  
IT 2466-76-4P 4195-19-1P 4238-71-5P 10364-94-0P 17450-31-6P  
60718-45-8P 61985-22-6P 61985-23-7P 61985-24-8P 61985-37-3P  
61985-38-4P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and photochem. rearrangement of)

L7 ANSWER 59 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1976:523767 CAPLUS  
DN 85:123767  
ED Entered STN: 12 May 1984  
TI Substituted chromone compounds  
IN Brown, Roger Charles; Hazard, Richard; Mann, John  
PA Fisons Ltd., UK  
SO Ger. Offen., 120 pp.  
CODEN: GWXXBX  
DT Patent  
LA German  
IC C07D311-24  
CC 27-14 (Heterocyclic Compounds (One Hetero Atom))  
Section cross-reference(s): 28

FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2553688	A1	19760610	DE 1975-2553688	19751128
	GB 1517153	A	19780712	GB 1974-51944	19741130
	CS 191957	P	19790731	CS 1975-7912	19751121
	CS 191997	P	19790731	CS 1977-1314	19751121
	DK 7505351	A	19760531	DK 1975-5351	19751127
	FR 2292468	A1	19760625	FR 1975-36301	19751127

FR 2292468	B1	19781201		
AT 7509006	A	19790115	AT 1975-9006	19751127
AT 351530	B	19790725		
CA 1065329	A1	19791030	CA 1975-240751	19751127
HU 18238	O	19800528	HU 1975-FI608	19751127
HU 175915	P	19801128		
SU 793394	D	19801230	SU 1975-2191857	19751127
BE 836121	A1	19760528	BE 1975-162321	19751128
FI 7503369	A	19760531	FI 1975-3369	19751128
SE 7513446	A	19760531	SE 1975-13446	19751128
SE 420835	B	19811102		
SE 420835	C	19820211		
NL 7513918	A	19760601	NL 1975-13918	19751128
BR 7507936	A	19760831	BR 1975-7936	19751128
ZA 7507512	A	19770223	ZA 1975-7512	19751128
CH 615171	A	19800115	CH 1975-15518	19751128
JP 51076277	A2	19760701	JP 1975-141857	19751129
ES 443093	A1	19771016	ES 1975-443093	19751129
PL 104546	P	19790831	PL 1975-197428	19751129
PL 106681	P	19800131	PL 1975-185106	19751129
NO 7504040	A	19760601	NO 1975-4040	19751201
NO 145982	B	19820329		
NO 145982	C	19820707		
DD 124735	C	19770309	DD 1975-190622	19751201
AU 7587143	A1	19770609	AU 1975-87143	19751201
AU 500872	B2	19790607		
SU 622402	D	19780830	SU 1976-2377398	19760705
AT 7804552	A	19790115	AT 1978-4552	19780622
AT 351534	B	19790725		
CH 618977	A	19800829	CH 1979-1687	19790221
PRAI GB 1974-51944	A	19741130		
GB 1974-53704	A	19741212		
GB 1975-21043	A	19750516		
GB 1975-21044	A	19750516		
AT 1975-9006	A	19751127		
CH 1975-15518	A	19751128		

# CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
DE 2553688	IC	C07D311-24
	IPCI	C07D0311-24; A61K0031-35
	IPCR	C07C0045-00 [I,C]; C07C0045-54 [I,A]; C07C0045-62 [I,A]; C07C0045-63 [I,A]; C07C0045-64 [I,A]; C07C0045-67 [I,A]; C07C0045-71 [I,A]; C07C0049-00 [I,C]; C07C0049-83 [I,A]; C07C0049-86 [I,A]; C07D0311-00 [I,C]; C07D0311-58 [I,A]; C07D0311-74 [I,A]; C07D0311-78 [I,A]; C07D0311-92 [I,A]; C07D0493-00 [I,C]; C07D0493-04 [I,A]
GB 1517153	IPCI	C07D0311-24; A61K0031-35; C07D0311-92; C07D0493-04
	IPCR	C07D0311-00 [I,C]; C07D0311-58 [I,A]; C07D0311-74 [I,A]; C07D0311-78 [I,A]; C07D0311-92 [I,A]
CS 191957	IPCI	C07D0311-22; A61K0031-35 [ICA]
CS 191997	IPCI	C07D0311-22; A61K0031-35
DK 7505351	IPCI	C07D
FR 2292468	IPCI	A61K0031-35; C07D0311-92; C07D0493-04
	IPCR	C07C0045-00 [I,C]; C07C0045-54 [I,A]; C07C0045-62 [I,A]; C07C0045-63 [I,A]; C07C0045-64 [I,A]; C07C0045-67 [I,A]; C07C0045-71 [I,A]; C07C0049-00 [I,C]; C07C0049-83 [I,A]; C07C0049-86 [I,A]; C07D0311-00 [I,C]; C07D0311-58 [I,A]; C07D0311-74 [I,A]; C07D0311-78 [I,A]; C07D0311-92 [I,A]; C07D0493-00 [I,C]; C07D0493-04 [I,A]
AT 7509006	IPCI	C07D0311-22
CA 1065329	IPCI	C07D0311-24; C07D0493-04
	IPCR	C07C0045-00 [I,C]; C07C0045-54 [I,A]; C07C0045-62 [I,A]; C07C0045-63 [I,A]; C07C0045-64 [I,A]; C07C0045-67 [I,A]; C07C0045-71 [I,A]; C07C0049-00 [I,C]; C07C0049-83 [I,A]; C07C0049-86 [I,A]; C07D0311-00 [I,C]; C07D0311-58 [I,A]; C07D0311-74 [I,A]; C07D0311-78 [I,A]; C07D0311-92 [I,A]; C07D0493-00 [I,C]; C07D0493-04 [I,A]
HU 18238	IPCI	C07D0311-22; C07D0311-92



SU 793394	IPCI	C07D0311-24; A61K0031-35
BE 836121	IPCI	C07D
FI 7503369	IPCI	C07D
SE 7513446	IPCI	C07D0311-24
NL 7513918	IPCI	C07D0311-04; A61K0031-35; C07D0493-02
BR 7507936	IPCI	C07D0307-92; A61K0031-35
ZA 7507512	IPCI	C07C
CH 615171	IPCI	C07D0311-92; C07D0311-24
JP 51076277	IPCI	C07D0311-24; A61K0031-35 [ICA]
ES 443093	IPCI	C07D; A61K
PL 104546	IPCI	C07D0311-22
PL 106681	IPCI	C07D0311-24
NO 7504040	IPCI	C07D0311-24
DD 124735	IPCI	C07D0311-92
AU 7587143	IPCI	C07D0311-80; C07D0493-04; C07D0493-06; C07C0069-14; C07C0069-24; A61K0031-35; C07D0495-10; C07D0495-20; C07F0009-09
SU 622402	IPCI	C07D0311-24
AT 7804552	IPCI	C07D0311-22
CH 618977	IPCI	C07D0311-92; C07D0493-04

GI

/ Structure 29 in file :gra /

AB Fused-ring chromones I [R = Et, Pr, allyl, CH<sub>2</sub>CH(OH)CH<sub>2</sub>R<sub>3</sub> ((R<sub>3</sub> = H, OH, Cl), Br, CHO, CH<sub>2</sub>OEt, R<sub>1</sub> = H, NO<sub>2</sub>, NH<sub>2</sub>, OH, Cl, NMe<sub>2</sub>, NH<sub>2</sub>Et, MeO, PrO, allyloxy, F, R<sub>2</sub> = H; R = Pr, R<sub>1</sub> = H, R<sub>2</sub> = Me], 6,7,8,9-tetradehydro derivs. of I (R = Pr, R<sub>1</sub> = H, OH, R<sub>2</sub> = H), II, III (R = Pr, R<sub>1</sub> = H, Me; R = H, R<sub>1</sub> = Me; R = CH<sub>2</sub>CH<sub>2</sub>Ph, R<sub>1</sub> = H), and IV (47 compds.), useful in treatment of allergic asthma (no \*\*\*data\*\*\*), were prepd. by numerous methods or variations thereof. Thus, allylation of naphthol V (R<sub>3</sub> = R<sub>4</sub> = H) gave the ether V (R<sub>3</sub> = allyl, R<sub>4</sub> = H) which, on \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*, gave naphthol V (R<sub>3</sub> = H, R<sub>4</sub> = allyl). This was hydrogenated to V (R<sub>3</sub> = H, R<sub>4</sub> = Pr) which was cyclized with (CO<sub>2</sub>Et)<sub>2</sub> and the resulting I (R = Pr, R<sub>1</sub> = R<sub>2</sub> = H) Et ester hydrolyzed to give I (R = Pr, R<sub>1</sub> = R<sub>2</sub> = H).

ST naphthopyran allergic asthma remedy; benzodipyran allergic asthma remedy; chromone fused ring asthma remedy; \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* alkoxynaphthalene

IT Asthma  
(allergic, naphthopyrans and benzodipyran in treatment of)

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
(of allyloxynaphthalenes)

IT 74-88-4  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(Grignard reaction with dihydromethoxyoxobenzopyran)

IT 42327-52-6  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(Grignard reaction with methyl iodide)

IT 16982-92-6  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(acetylation of)

IT 123-62-6  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(acylation of tetrahydrohydroxynaphthalene)

IT 40420-05-1 55736-70-4  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(allylation of)

IT 106-95-6  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(allylation of acetylhydroxytetrahydronaphthalene by)

IT 883-75-0  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(cyclization of, with acetylenedicarboxylate)

IT 95-92-1  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(cyclization with acetylhydroxytetrahydronaphthalenes or acetylhydroxydihydrobenzopyrans)

IT 60401-59-4  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(cyclization with diethyl oxalate)

IT 762-42-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(cyclization with hydroxytetrahydronaphthalenes)

IT 60401-81-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(desulfuration of)

IT 40420-05-1  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(formylation of)

IT 50585-00-7  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(hydrogenation of)

IT 60401-46-9 60401-79-8 60401-87-8  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(hydrolysis of)

IT 60401-54-9  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(methylation of)

IT 60401-77-6 60401-82-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(oxidn. of)

IT 60401-32-3P 60401-56-1P 60401-58-3P 60401-62-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)

IT 60401-36-7P 60401-44-7P 60401-69-6P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and acidification of)

IT 60401-57-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and allylation of)

IT 60401-40-3P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and cyclization of)

IT 60401-34-5P 60401-52-7P 60401-64-1P 60401-70-9P 60401-74-3P  
60401-88-9P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and cyclization with diethyl oxalate)

IT 60401-38-9P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and cyclization with dimethyl acetylenedicarboxylate)

IT 60401-66-3P 60401-86-7P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and dehydration of)

IT 60401-91-4P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and esterification of)

IT 60400-97-7P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and hydration of)

IT 60400-96-6P 60401-13-0P 60401-60-7P 60401-63-0P 60401-83-4P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and hydrogenation of)

IT 60401-08-3P 60401-72-1P 60401-73-2P 60401-76-5P 60401-85-6P  
60401-89-0P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and hydrolysis of)

IT 60401-67-4P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and methylation of)

IT 60400-92-2P 60400-96-6P 60401-33-4P 60401-35-6P 60401-42-5P  
60401-43-6P 60401-45-8P 60401-68-5P 60401-71-0P 60401-75-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and reactions of)  
 IT 60397-95-7P 60401-41-4P 60401-47-0P 60401-48-1P 60401-51-6P  
 60401-53-8P 60401-55-0P 60401-61-8P 60401-65-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and sapon. of)  
 IT 60401-50-5P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and thermolysis of)  
 IT 60400-86-4P 60400-87-5P 60400-88-6P 60400-89-7P 60400-90-0P  
 60400-91-1P 60400-93-3P 60400-94-4P 60400-95-5P 60400-98-8P  
 60400-99-9P 60401-00-5P 60401-01-6P 60401-02-7P 60401-03-8P  
 60401-04-9P 60401-05-0P 60401-06-1P 60401-07-2P 60401-09-4P  
 60401-10-7P 60401-11-8P 60401-12-9P 60401-14-1P 60401-15-2P  
 60401-16-3P 60401-17-4P 60401-18-5P 60401-19-6P 60401-20-9P  
 60401-21-0P 60401-22-1P 60401-23-2P 60401-24-3P 60401-25-4P  
 60401-26-5P 60401-27-6P 60401-28-7P 60401-29-8P 60401-30-1P  
 60401-31-2P 60401-39-0P 60401-78-7P 60401-84-5P 60401-90-3P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)  
 IT 4885-02-3  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with acetyltetrahydronaphthol)  
 IT 1125-78-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with propionic anhydride)  
 IT 60401-37-8 60401-80-1  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (redn. of)

L7 ANSWER 60 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1976:4592 CAPLUS  
 DN 84:4592  
 ED Entered STN: 12 May 1984  
 TI Preparation of o-hydroxy ketoanils  
 AU Joshi, G. B.; Patel, G. S.; Thakor, V. M.  
 CS Dep. Chem., Saurashtra Univ., Bhavnagar, India  
 SO Journal of the Institution of Chemists (India) (1975), 47, Pt. 4, 152-4  
 CODEN: JOICA7; ISSN: 0020-3254  
 DT Journal  
 LA English  
 CC 25-16 (Noncondensed Aromatic Compounds)  
 Section cross-reference(s): 26, 22  
 AB Condensation reaction of 5,2-Me(HO)C6H3COEt, obtained by \*\*\*Fries\*\*\*  
 \*\*\*rearrangement\*\*\* of p-MeC6H4O2CET, with rp-RC6H4NH2 (R = H, Me, MeO,  
 Br, Cl) or 1-naphthylamine in the presence of ZnCl2 at 160.degree. for 0.5  
 hr and then at 180.degree. for 5 min gave the corresponding anils. Uv and  
 ir spectral \*\*\*data\*\*\* for the anils were given. The anils were  
 chelating agents for Cu(II), Ni(II), and Co(II).  
 ST hydroxy ketoanil; propiophenone anil chelating agent; UV propiophenone  
 anil; IR propiophenone anil; condensation propiophenone arom amine  
 IT Amines, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (arom., with hydroxymethylpropiophenone)  
 IT Schiff bases  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (from hydroxymethylpropiophenone, chelating agents for copper, nickel,  
 and cobalt)  
 IT Condensation reaction  
 (of hydroxymethylpropiophenone with arom. amines)  
 IT 7495-84-3  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 ( \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)  
 IT 57442-43-0P 57442-45-2P 57442-47-4P 57442-49-6P 57442-51-0P  
 57442-53-2P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and uv spectrum of)  
 IT 57442-44-1P 57442-46-3P 57442-48-5P 57442-50-9P 57442-52-1P  
 57442-54-3P

RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)  
 IT 938-45-4P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of, and reaction with anilines and with naphthylamine)  
 IT 104-94-9 106-40-1 106-47-8 106-49-0 134-32-7  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with hydroxymethylpropiophenone)  
 IT 62-53-3, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (with hydroxymethylpropiophenone)

L7 ANSWER 61 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1974:425994 CAPLUS  
 DN 81:25994  
 ED Entered STN: 12 May 1984  
 TI Polycondensation of phenyl acetate and phenyl chloroacetate with  
 formaldehyde  
 AU Zil'berman, E. N.; Gurevich, K. L.; Aronovich, D. A.; Tsareva, L. A.  
 CS Gor'k Politekh. Inst. im. Zhdanova, Gorki, USSR  
 SO Izvestiya Vysshikh Uchebnykh Zavedenii, Khimiya i Khimicheskaya  
 Tekhnologiya (1974), 17(2), 289-90  
 CODEN: IVUKAR; ISSN: 0579-2991  
 DT Journal  
 LA Russian  
 CC 35-3 (Synthetic High Polymers)  
 AB A ketone-contg. phenolic resin was obtained during the acid  
 polycondensation of formaldehyde (I) [50-00-0] with phenyl acetate  
 [122-79-2] at 60.deg.. IR \*\*\*data\*\*\* indicated the presence of CO and  
 OH groups and the absence of ester groups. Apparently, in acid  
 conditions, a migration of the acetyl group to an ortho or para position,  
 i.e., a \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*, occurred. On  
 condensation of I with phenyl chloroacetate [620-73-5], an inter- and  
 intramol. alkylation of the phenolic resin, with HCl sepn., occurred in  
 addn. to the rearrangement.  
 ST acetyl migration phenolic resin; phenyl acetate formaldehyde polymn  
 IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 (in polymn. of phenyl acetate and chloroacetate with formaldehyde)  
 IT Phenolic resins  
 RL: USES (Uses)  
 (ketone-contg., from phenyl acetate and chloroacetate)  
 IT Acetyl group  
 (migration of, during polymn. of phenyl acetate and chloroacetate with  
 formaldehyde)  
 IT Polymerization  
 (of phenyl acetate and chloroacetate with formaldehyde, acetyl  
 migration in)  
 IT 122-79-2 620-73-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (polymn. of, with formaldehyde, acetyl migration in)  
 IT 50-00-0, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (polymn. of, with phenyl acetate and chloroacetate, acetyl migration  
 in)

L7 ANSWER 62 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1971:517731 CAPLUS  
 DN 75:117731  
 ED Entered STN: 12 May 1984  
 TI Photochemical reactions of some aryloxy-s-triazines in solution  
 AU Shizuka, H.; Kanai, T.; Morita, T.; Ohoto, Y.; Matsui, K.  
 CS Dep. Chem., Gunma Univ., Kiryu, Japan  
 SO Tetrahedron (1971), 27(17), 4021-30  
 CODEN: TETRAB; ISSN: 0040-4020  
 DT Journal  
 LA English  
 CC 22 (Physical Organic Chemistry)  
 AB The photochem. reactions of some aryloxy s-triazines were studied.  
 Aryloxy striazines undergo two types of photoisomerizations: the  
 photo-Smiles- \*\*\*rearrangement\*\*\* and the photo- \*\*\*Fries\*\*\* -  
 \*\*\*rearrangement\*\*\* depending upon the presence or absence of an  
 adjacent amino group on the aryloxy group. The photoproducts obtained by

the latter were assigned to o- and p-hydroxyaryl-s-triazines, the characteristic \*\*\*data\*\*\* of these new products are listed. On the basis of quantum yields for the product formations, the reaction mechanism of the photo- \*\*\*Fries\*\*\* - \*\*\*rearrangements\*\*\* of some aryloxy triazines was discussed.

ST aryloxy triazines photochem; Smiles rearrangement photochem; \*\*\*Fries\*\*\*  
 IT \*\*\*rearrangement\*\*\* photochem  
 IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 Smiles rearrangement  
 (photochemical, of dimethoxyphenoxytriazine derivs.)

IT 33950-62-8P 33950-63-9P 33950-64-0P 33978-98-2P 33978-99-3P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)

IT 21002-15-3 33950-59-3 33950-60-6 33950-61-7  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (rearrangement of, mechanism of photochemical)

L7 ANSWER 63 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1970:492221 CAPLUS  
 DN 73:92221  
 ED Entered STN: 12 May 1984  
 TI Dissociation of titanium tetrahalide etherates and the role of their  
 complex ions in some organic reactions  
 AU Lysenko, Yu. A.; Medvedeva, V. I.  
 CS Donets. Politekh. Inst., Donetsk, USSR  
 SO Zhurnal Obshchei Khimii (1970), 40(5), 965-9  
 CODEN: ZOKHA4; ISSN: 0044-460X  
 DT Journal  
 LA Russian  
 CC 68 (Phase Equilibriums, Chemical Equilibriums, and Solutions)  
 AB From electrolytic \*\*\*data\*\*\* on systems of Et caproate, EtOAc, and  
 BuO<sub>2</sub>CH with TiCl<sub>4</sub> and TiBr<sub>4</sub>, the 1:1 complexes of TiCl<sub>4</sub> are able to  
 dissociate in the sense of formation of (TiX<sub>3</sub>E)<sup>+</sup> and (TiX<sub>5</sub>E)<sup>-</sup> ions, where E  
 is the ester. For adducts of 1:2 compn., the dissociation results in ions of  
 types (TiX<sub>3.3</sub>E)<sup>+</sup> and (TiX<sub>5</sub>E)<sup>-</sup>, resp. The ionization scheme of the 1:1  
 complexes shows the likelihood of the participation of (TiX<sub>3</sub>E)<sup>+</sup> ions in  
 alkylation reactions and \*\*\*Fries\*\*\* \*\*\*rearrangements\*\*\*

ST titanium halide etherates dissociate; etherates titanium halide dissociate;  
 dissociate titanium halide etherates; halides titanium etherates dissociate

IT Ionization in liquids  
 (of titanium ester complexes, alkylation and \*\*\*Fries\*\*\*  
 \*\*\*rearrangement\*\*\* catalysts in relation to)

IT Alkylation catalysts  
 \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* catalysts  
 (titanium halide ester complexes, ionization of)

IT Formic acid, butyl ester, titanium complexes  
 Hexanoic acid, ethyl ester, titanium complexes  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)

IT 19228-88-7 22804-27-9 29891-45-0 29894-44-8 29894-46-0  
 29894-47-1 29896-74-0 29896-75-1 30141-93-6 30141-94-7  
 30141-95-8 31859-27-5  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (ionization of)

IT 141-78-6DP, Acetic acid ethyl ester, titanium complexes  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)

L7 ANSWER 64 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1970:455765 CAPLUS  
 DN 73:55765  
 ED Entered STN: 12 May 1984  
 TI Synthesis of potential plant growth regulators. Synthesis of  
 2-n-alkyl-5-chlorophenoxyacetic acids  
 AU Pawar, R. A.; Shingte, R. D.; Gogte, V. N.  
 CS Dep. Chem., Shivaji Univ., Kolhapur, India  
 SO Indian Journal of Chemistry (1970), 8(6), 522-5  
 CODEN: IJOCAP; ISSN: 0019-5103  
 DT Journal  
 LA English  
 CC 25 (Noncondensed Aromatic Compounds)  
 GI For diagram(s), see printed CA Issue.

AB 2-n-Alkyl-4-chlorophenoxyacetic acids, e.g. I were prepd. by \*\*\*Fries\*\*\*  
\*\*\*rearrangement\*\*\* of o-(m-chlorophenoxy)carboxylates, Clemmenson redn.  
of the resulting 2-acyl-5-chlorophenols followed by treatment with  
ClCH<sub>2</sub>CO<sub>2</sub>H in the presence of alkali. Ir and NMR \*\*\*data\*\*\* of the  
intermediates are discussed. The mass spectra of phenoxyacetic acids were  
recorded and fragmentation modes described.  
ST chloro phenoxyacetic acids; phenoxyacetic acids chloro  
IT 1127-97-5P 4133-95-3P 6921-66-0P 27581-12-0P 27581-18-6P  
27581-19-7P 27581-20-0P 27581-21-1P 27581-22-2P 27581-23-3P  
27594-31-6P 27594-32-7P 27594-33-8P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

L7 ANSWER 65 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1970:31370 CAPLUS  
DN 72:31370

ED Entered STN: 12 May 1984

TI Potential antifertility agents. III. Synthesis of basic ethers from  
phenolic 2, 3-diphenylacrylophenones and related compounds

AU Iyer, R. N.; Gopalchari, R.

CS Cent. Drug Res. Inst., Lucknow, India

SO Indian Journal of Pharmacy (1969), 31(2), 49-54

CODEN: IJPAAO; ISSN: 0019-5472

DT Journal

LA English

CC 25 (Noncondensed Aromatic Compounds)

GI For diagram(s), see printed CA Issue.

AB \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of 1 mole crude PhCH<sub>2</sub>CO<sub>2</sub>Ph with  
1.05 mole AlCl<sub>3</sub> in 150 ml PhNO<sub>2</sub> gave 125 g 4-HO-C<sub>6</sub>H<sub>4</sub>COCH<sub>2</sub>Ph, m.  
152.degree.. Similarly, Ph 4-nitrophenylacetate rearranged to 70%  
4-HOC<sub>6</sub>H<sub>4</sub>COCH<sub>2</sub>C<sub>6</sub>H<sub>4</sub>NO<sub>2</sub>-4, m. 167.degree.. Acylation of 12.8 g  
2-chlorophenol with PhCH<sub>2</sub>COCl in the presence of 30 g AlCl<sub>3</sub> in PhNO<sub>2</sub> gave  
10 g 3,4-Cl(HO)C<sub>6</sub>H<sub>3</sub>-COCH<sub>2</sub>Ph. 4-MeOC<sub>6</sub>H<sub>4</sub>COCHPhOH (9.6 g) treated with 9.6 g  
amalgamated Sn and 20 ml HCl, d. 1.18, in 25 ml boiling EtOH 16 hr was  
reduced and isomerized to 6.4 g 4-MeOC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>Bz, m. 97.degree.. This was  
demethylated by boiling with pyridine-HCl 6 hr to give 5.7 g 4-  
HOC<sub>6</sub>H<sub>4</sub>CH<sub>2</sub>Bz, m. 143.degree.. A suspension of 8.5 g 4-HOC<sub>6</sub>H<sub>4</sub>COCH<sub>2</sub>Ph in 100  
ml boiling C<sub>6</sub>H<sub>6</sub> was condensed with 5.6 g 4-chlorobenzaldehyde in the  
presence of 1.4 ml piperidine and 2.4 ml HOAc during 24 hr while 50 ml  
solvent was gradually distd. to give 9.5 g 2-phenyl-3-(4-chlorophenyl)-4'-  
hydroxyacrylophenone (I) (R<sub>1</sub> = OH, R<sub>2</sub> = R<sub>3</sub> = H, R<sub>4</sub> = 4-ClC<sub>6</sub>H<sub>4</sub>), m.  
173.degree.. This (6.7 g) was alkylated with 4.1 g .beta.-  
pyrrolidinoethyl chloride-HCl in boiling Me<sub>2</sub>CO contg. 6.1 g fused K<sub>2</sub>CO<sub>3</sub> 24  
hr to give 6 g of the basic ether (I), [R<sub>1</sub> = .beta.-pyrrolidinoethoxy, R<sub>2</sub>  
= R<sub>3</sub> = H, R<sub>4</sub> = 4-ClC<sub>6</sub>H<sub>4</sub>], m. 90.degree.. Similarly prepd. were the  
following I (R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, and m.p. given): OH, H, H, Ph,  
190-2.degree.; OH, H, H, 2-ClC<sub>6</sub>H<sub>4</sub>, 161.degree. (Z ether m. 77.degree., Z =  
.beta.-pyrrolidinoethyl); OH, H, H, 3-ClC<sub>6</sub>H<sub>4</sub>, 174.degree.; OH, H, H,  
4-ClC<sub>6</sub>H<sub>4</sub>, 173.degree. (Z ether m. 90.degree.); OH, H, H, 2-FC<sub>6</sub>H<sub>4</sub>,  
180.degree. (Z ether m. 76.degree.); OH, H, H, 3-FC<sub>6</sub>H<sub>4</sub>, 162.degree.; OH,  
H, H, 4-FC<sub>6</sub>H<sub>4</sub>, 157.degree.; OH, H, H, 3-MeOC<sub>6</sub>H<sub>4</sub>, 163.degree.; OH, H, H,  
4-MeOC<sub>6</sub>H<sub>4</sub>, 176-8.degree.; OH, H, H, 4-MeC<sub>6</sub>H<sub>4</sub>, 158.degree.; OH, H, H,  
4-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>, 173.degree. (Z ether m. 118.degree.); OH, H, H, 3,4-Cl<sub>2</sub>C<sub>6</sub>H<sub>3</sub>,  
176.degree. (Z ether m. 76.degree.); OH, H, H, 3,4-(MeO)<sub>2</sub>C<sub>6</sub>H<sub>3</sub>, 204.degree.  
(Et<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub> ether citrate m. 152.degree.); OH, H, H, 3,4-  
methylenedioxyphenyl, 225.degree. (Et<sub>2</sub>NCH<sub>2</sub>CH<sub>2</sub> ether citrate m.  
142.degree.; Z ether m. 97.degree.); OH, H, H, thienyl, 166.degree.; OH,  
H, NO<sub>2</sub>, 4-ClC<sub>6</sub>H<sub>4</sub>, 202.degree.; OH, Me, H, 4-ClC<sub>6</sub>H<sub>4</sub>, 172.degree.; OH, Cl,  
H, Ph, 176.degree.; Cl, H, H, 4-HOC<sub>6</sub>H<sub>4</sub>, 175.degree. (Z ether picrate m.  
155.degree.); and H, H, OH, 4-ClC<sub>6</sub>H<sub>4</sub>, 180.degree. (Z ether m.  
116.degree.). Ph<sub>2</sub>CO (36.4 g) condensed with 30 g 4-MeOC<sub>6</sub>H<sub>4</sub>Ac in boiling  
C<sub>6</sub>H<sub>6</sub> in the presence of 12 g NaH gave 20 g 4-MeOC<sub>6</sub>H<sub>4</sub>COCH:CPh<sub>2</sub>, m.  
156.degree.. This (9.24 g) was demethylated with AlCl<sub>3</sub> to 8 g  
corresponding phenol, m. 190.degree.. 2-Phenylacetophenone and  
4-(.beta.-diethylaminoethoxy)benzaldehyde condensed in boiling C<sub>6</sub>H<sub>6</sub> in  
presence of piperidine acetate gave 2-phenyl-3-[4-(.beta.-  
diethylaminoethoxy)phenyl]acrylophenone; citrate m. 163.degree.. The  
highest bioactivity was given by the basic ethers of I (R<sub>1</sub> = OH, R<sub>2</sub> = R<sub>3</sub> =  
H, R<sub>4</sub> = 4-ClC<sub>6</sub>H<sub>4</sub>) which at 1-2 mg/kg/day for the first 5 days of pregnancy  
prevented implantation in albino rats. Test \*\*\*data\*\*\* were given.  
ST antifertility acrylophenones; acrylophenones antifertility; ketones  
olefinic araliph; olefinic araliph ketones; araliph ketones olefinic;

pyrrolidinyl ethers arom; ethers arom pyrrolidinyl; ethers araliph  
IT 2491-32-9P 15272-64-7P 15272-65-8P 15272-66-9P 15272-67-0P  
15272-68-1P 15288-31-0P 17575-62-1P 17575-63-2P 17575-64-3P  
17599-75-6P 24845-07-6P 24845-08-7P 24845-09-8P 24845-10-1P  
24845-11-2P 24845-12-3P 24845-13-4P 24845-14-5P 24845-15-6P  
24845-16-7P 24845-17-8P 24845-18-9P 24845-21-4P 24845-22-5P  
24845-25-8P 24845-26-9P 24845-27-0P 24845-30-5P 24845-31-6P  
24845-32-7P 24845-35-0P 24845-37-2P 24845-38-3P 24845-39-4P  
24845-40-7P 24845-41-8P 24845-42-9P 24845-43-0P 24845-44-1P  
24845-45-2P 24845-47-4P 24845-48-5P 24845-49-6P 24854-16-8P  
24854-17-9P 24854-18-0P 24854-19-1P 24854-20-4P 24854-22-6P  
24854-23-7P 24854-24-8P 24854-25-9P 24854-26-0P 24863-68-1P  
25898-19-5P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

L7 ANSWER 66 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1969:525332 CAPLUS  
DN 71:125332  
ED Entered STN: 12 May 1984  
TI Photochemical reactions of aryl polycarbonate esters  
AU Humphrey, J. Stevenson, Jr.  
CS Gen. Elec. Res. and Develop. Center, Schenectady, NY, USA  
SO Polymer Preprints (American Chemical Society, Division of Polymer  
Chemistry) (1968), 9(1), 453-60  
CODEN: ACPPAY; ISSN: 0032-3934  
DT Journal  
LA English  
CC 36 (Plastics Manufacture and Processing)  
AB Dil. 1,2-dichloroethane solns. (10-3 and 10-5M) of the polycarbonate ester  
of bisphenol A and, as model compounds for the polymer,  
bis(4-tertbutylphenyl) carbonate (I) and 4-tert-butylphenyl  
5-tert-butylsalicylate (II) were irradiated with narrow band (75 A.  
half-width) uv energy of wavelength 270.5 m.mu. and the progress of  
reactions followed spectrophotometrically. For nominal conversions of  
5-10%, these compds. undergo rearrangement with no accompanying photolysis  
to phenolic or other fragment products. Quantum efficiency measurements  
indicate that for actinic light at 270.5 m.mu., the rearrangement of I  
.fwdarw. II proceeds ca. 2.5 times faster than the rearrangement of II  
.fwdarw. 5,5'-di-tert-butylphenyl-2,2'-dihydroxybenzophenone (III). Anal.  
of the polymer irradiation. \*\*\*data\*\*\* using the molar extinction coeffs.  
of II and III for the rearranged polymer photoproducts leads to the  
conclusion that I is a suitable model compd. for irradiation studies of the  
polymer. These and other results for irradiation of polycarbonate/bisphenol A  
mixts. with monochromated uv will be discussed with respect to the  
mechanism of photo- \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of aryl  
carbonate esters.

ST polycarbonates photochemistry; photochemistry polycarbonates; carbonate  
esters irradiation; irradiation carbonate esters; salicylate esters irradiation  
IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
(of bisphenol A polycarbonates)  
IT 2561-97-9 24113-61-9 25446-98-4  
RL: USES (Uses)  
(model compd., for \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of  
polycarbonates)  
IT 463-79-6, Carbonic acid  
RL: USES (Uses)  
(polyesters, \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of)

L7 ANSWER 67 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1969:480880 CAPLUS  
DN 71:80880  
ED Entered STN: 12 May 1984  
TI \*\*\*Fries\*\*\* reaction. IV. \*\*\*Rearrangement\*\*\* of monobromophenyl  
propionates  
AU Martin, Robert; Betoux, Jean Marie  
CS Etab. Clin. Byla, Massy, Fr.  
SO Bulletin de la Societe Chimique de France (1969), (6), 2079-88  
CODEN: BSCFAS; ISSN: 0037-8968  
DT Journal  
LA French  
CC 25 (Noncondensed Aromatic Compounds)

\*\*\*Fries\*\*\*      \*\*\*rearrangement\*\*\*      of monobromophenyl propionates  
 proceeds easily to the corresponding o- and p-acylphenols.  
 p-Propionylphenols undergo isomerization to o-propionylphenols by the  
 action of AlCl<sub>3</sub>. The ortho-orientation effect of TiCl<sub>4</sub> was confirmed when  
 the rearrangement occurred in the absence of solvent. Redn. of the  
 carbonyl group of propionylphenols by KBH<sub>4</sub> gave the corresponding alcs.  
 2-Bromophenyl propionate (I), 86.1%, b<sub>16</sub> 128-9.degree., d<sub>20</sub> 1.432, n<sub>20D</sub>  
 1.533, was prepd. from the phenol and EtCOCl in C<sub>6</sub>H<sub>6</sub>. Rearrangement of I  
 2 hrs. at 100.degree. with AlCl<sub>3</sub> gave 94.8% 2-bromo-4-propionylphenol  
 (II), m. 132.degree.; 2,4-dinitrophenylhydrazones (DNP) m. 255.degree.. II  
 and Me<sub>2</sub>SO<sub>4</sub> gave 82% 2-bromo-4-propionylanisole (III), m. 101.degree.; DNP  
 m. 254-6.degree.. III was also prepd. by direct bromination of  
 4-propionylanisole, yield 94%. Redn. of III with KBH<sub>4</sub> gave 91%  
 2-bromo-4-(1-hydroxypropyl)anisole, b<sub>15</sub> 181.degree., n<sub>20D</sub> 1.421, d<sub>20</sub>  
 1.565. Treating II with Br-H<sub>2</sub>O gave 97.2% 2,6-dibromo-4-propionylphenol  
 (IV), m. 115-16.degree.; DNP m. 248-50.degree.. IV and Me<sub>2</sub>SO<sub>4</sub> gave 75.1%  
 2,6-dibromo-4-propionylanisole (V), b<sub>17</sub> 193.degree., m. 63-5.degree.; DNP  
 m. 249.degree.. KBH<sub>4</sub> redn. of V gave 99.0% 2,6-dibromo-4-propionylphenol,  
 m. 61.degree., n<sub>20D</sub> 1.580, d<sub>20</sub> 1.693. Heating 30 g. I with 38 g. TiCl<sub>4</sub> 30  
 min. at 110.degree. gave 29.0% 2-bromo-6-propionylphenol (VI), m.  
 55-6.degree.; DNP m. 274-6.degree.. Methylation of VI gave 91.5%  
 2-bromo-6-propionylanisole (VII), b<sub>14</sub> 143.degree., m. 2-3.degree., n<sub>20D</sub>  
 1.551, d<sub>20</sub> 1.418; DNP m. 154-5.degree.. KBH<sub>4</sub> redn. of VII gave 87.6%  
 2-bromo-6-(1-hydroxypropyl)anisole, b<sub>14</sub> 153.degree., n<sub>20D</sub> 1.5535, d<sub>20</sub>  
 1.398. 3-Bromophenyl-propionate (VIII), b<sub>17</sub> 136.degree., d<sub>20</sub> 1.4284, n<sub>20D</sub>  
 1.5335, was heated 3 hrs. at 50.degree. with AlCl<sub>3</sub> to give 15.6%  
 3-bromo-4-propionylphenol (IX), m. 101-2.degree., and 47.6%  
 3-bromo-6-propionylphenol (X), m. 61-2.degree., b<sub>17</sub> 156-8.degree.; DNP m.  
 226.degree.. Methylation of X with Me<sub>2</sub>SO<sub>4</sub> gave 79.6% 3-bromo-6-  
 propionylanisole (XI), m. 42.degree., b<sub>11</sub> 159.degree., b<sub>19</sub> 171.degree.,  
 n<sub>20D</sub> 1.570; DNP m. 156.degree.. KBH<sub>4</sub> redn. of XI gave 95%  
 3-bromo-6-(1-hydroxypropyl)anisole, m. 44.degree., b<sub>12</sub> 161-2.degree., n<sub>20D</sub>  
 1.5675, d<sub>20</sub> 1.402. Methylation of IX with Me<sub>2</sub>SO<sub>4</sub> gave 85.2%  
 3-bromo-4-propionylanisole (XII), b<sub>12</sub> 167.degree., m. 33.degree., n<sub>20D</sub>  
 1.5695; DNP m. 143-4.degree.. KBH<sub>4</sub> redn. of XII gave 87.5%  
 3-bromo-4-(1-hydroxypropyl)anisole, m. 44.degree., b<sub>15</sub> 163-7.degree., n<sub>20D</sub>  
 1.561. Direct bromination of IX gave a colorless, very lachrimatory liq.  
 n<sub>20D</sub> 1.576. IX was dissolved in N NaOH, the mixt. dild., bromide-bromate  
 added, concd. HCl added, and the soln. shaken 30 min. to give 96.5%  
 4-propionyl-2,3,6-tribromophenol (XIII), m. 84-5.degree.. XIII and Me<sub>2</sub>SO<sub>4</sub>  
 gave 99.7% 4-propionyl-2,3,6-tribromoanisole (XIV), m. 90.degree.; DNP m.  
 112-13.degree.. KBH<sub>4</sub> redn. of XIV gave 100% 4-(1-hydroxypropyl)-2,3,6-  
 tribromoanisole, m. 91.degree.. Bromination of X with Br-H<sub>2</sub>O gave 88.8%  
 6-propionyl-2,3,4-tribromophenol (XV), m. 111.degree.; DNP m.  
 287-8.degree.. Methylation of XV with Me<sub>2</sub>SO<sub>4</sub> gave 92%  
 6-propionyl-2,3,4-tribromoanisole (XVI), m. 64.degree.; DNP m.  
 185.degree.. KBH<sub>4</sub> redn. of XVI gave 87% 6-(1-hydroxypropyl)-2,3,4-  
 tribromoanisole, m. 100.degree.. 4-Bromophenyl propionate, b<sub>17</sub>  
 137.degree., m. 11-6.degree., d<sub>20</sub> 1.4374, n<sub>20D</sub> 1.5355, was rearranged by  
 heating 1 hr. at 165.degree. with AlCl<sub>3</sub> to give 4-bromo-2-propionylphenol  
 (XVII), b<sub>21</sub> 154-6.degree., m. 76.degree.; DNP m. 251-3.degree..  
 Methylation of XVII with Me<sub>2</sub>SO<sub>4</sub> gave 90.4% 4-bromo-2-propionylanisole  
 (XVIII), m. 39.degree., b<sub>46</sub> 192-200.degree., n<sub>20D</sub> 1.566; DNP m.  
 206-7.degree.. KBH<sub>4</sub> redn. of XVIII gave 88% 4-bromo-2-(1-  
 hydroxypropyl)anisole, m. 64.degree.. XVII treated with Br-H<sub>2</sub>O gave 97.8%  
 4,6-dibromo-2-propionylphenol (XIX), m. 119-20.degree.. Bromination of  
 2-propionylphenol with Br-H<sub>2</sub>O gave 71.4% XIX, while similarly VI gave  
 97.7% XIX.      \*\*\*Fries\*\*\*      \*\*\*rearrangement\*\*\*      of 2,4-dibromophenyl  
 propionate, b<sub>17</sub> 163.degree., d<sub>20</sub> 1.736, n<sub>20D</sub> 1.565, 2 hrs. at 100.degree.  
 with AlCl<sub>3</sub> gave 88% XIX; DNP m. 254.degree.. Methylation of XIX with  
 Me<sub>2</sub>SO gave 80% 4,6-dibromo-2-propionylanisole (XX), m. 54.degree., b<sub>17</sub>  
 170.degree.; DNP m. 131-2.degree.. KBH<sub>4</sub> redn. of XX gave 74%  
 4,6-dibromo-2-(1-hydroxypropyl)anisole, m. 50.degree., n<sub>20D</sub> 1.579, d<sub>20</sub>  
 1.673. 3-Propionylphenol (1 g.) was dissolved in a 3:1 mixt. of AcOH-HCl  
 (d. 1.19), the soln. added dropwise over 10 min. to 200 ml.  
 bromide-bromate soln., and the mixt. kept 24 hrs. to give  
 3-propionyl-2,4,6-phenol, m. 72-3.degree.. Methylation of this with  
 Me<sub>2</sub>SO<sub>4</sub> gave 85.6% 3-propionyl-2,4,6-tribromoanisole, b<sub>15</sub> 192.degree., m.  
 36-7.degree., n<sub>20D</sub> 1.6018, d<sub>20</sub> 1.960. KBH<sub>4</sub> redn. of this at reflux 5 hrs.  
 gave 98.5% 3-(1-hydroxypropyl)-2,4,6-tribromoanisole, b<sub>15</sub> 195.degree.,  
 n<sub>40D</sub> 1.6072, d<sub>40</sub> 1.949. Ir and uv      \*\*\*data\*\*\*      were given.  
 \*\*\*Fries\*\*\*      \*\*\*rearrangements\*\*\*      arom propionates;



\*\*\*rearrangements\*\*\*      \*\*\*Fries\*\*\*      arom propionates; arom propionates  
 \*\*\*Fries\*\*\*      \*\*\*rearrangements\*\*\*      ; propionates arom      \*\*\*Fries\*\*\*  
 \*\*\*rearrangements\*\*\*      ; ketones arom; ethers arom; anisoles arom  
 IT      \*\*\*Fries\*\*\*      \*\*\*rearrangement\*\*\*  
         (of bromophenyl propionate derivs.)  
 IT      23600-76-2P      23600-77-3P      23689-33-0P      23689-34-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
         (Reactant or reagent)  
         (prepn. and rearrangement of)  
 IT      2887-65-2P      2887-68-5P      4374-36-1P      17744-48-8P      17744-58-0P  
         17744-61-5P      17744-65-9P      17744-72-8P      17744-76-2P      17764-91-9P  
         17764-92-0P      17764-93-1P      17765-09-2P      17765-22-9P      18430-72-3P  
         18430-73-4P      23597-53-7P      23597-54-8P      23597-55-9P      23600-56-8P  
         23600-57-9P      23600-58-0P      23600-59-1P      23600-60-4P      23600-62-6P  
         23600-63-7P      23600-64-8P      23600-65-9P      23600-68-2P      23600-69-3P  
         23600-70-6P      23600-72-8P      23600-73-9P      23600-74-0P      23600-75-1P  
         23689-23-8P      23689-25-0P      23689-26-1P      23689-30-7P      23689-31-8P  
         23689-32-9P      24876-03-7P      24876-04-8P      24876-05-9P      24876-08-2P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
         (prepn. of)  
  
 L7      ANSWER 68 OF 83      CAPLUS      COPYRIGHT 2006 ACS on STN  
 AN      1969:460493      CAPLUS  
 DN      71:60493  
 ED      Entered STN: 12 May 1984  
 TI      Preparation and spectral characterization of substituted  
         2-hydroxyacetophenones and 2-ethylphenols  
 AU      Givens, Edwin N.; Venuto, Paul B.; Alexakos, Louis G.  
 CS      Res. Dep., Mobil Res. and Dev. Corp., Paulsboro, NJ, USA  
 SO      Journal of Chemical and Engineering Data (1969), 14(3), 392-6  
         CODEN: JCEAAX; ISSN: 0021-9568  
 DT      Journal  
 LA      English  
 CC      22 (Physical Organic Chemistry)  
 AB      Prepn. of substituted 2-hydroxy-acetophenones and 2-ethylphenols is  
         reported, along with their mass spectra and N.M.R.      \*\*\*data\*\*\*  
         2-Hydroxyacetophenones were prepd. by the      \*\*\*Fries\*\*\*  
         \*\*\*rearrangement\*\*\*      of aryl acetates. 2-Ethylphenols were prepd. by  
         Clemmensen redn. of these hydroxyaceto-phenones or direct halogenation of  
         2-ethylphenol. Both types of compds. fragment under electron impact,  
         predominantly with loss of methyl radical. The loss of acetyl group (m/e  
         43), either as cation or radical, is of less importance for the  
         hydroxyaceto-phenones. Chem. shifts and coupling consts. for these  
         compds. were calcd. Intramol. H bonding in the 2-hydroxyacetophenones  
         gives rise to low-field hydroxyl proton resonances. A coupling between  
         the hydroxyl proton and a meta aromatic proton is observed for both the  
         acetophenones and ethylphenols, but on opposite sides of the ring.  
 ST      acetophenones mass spectra NMR; mass spectra NMR acetophenones; NMR mass  
         spectra acetophenones; phenols mass spectra NMR  
 IT      394-32-1      398-71-0      552-41-0      699-92-3      936-89-0      2219-78-5  
         3321-92-4      3855-26-3      18979-90-3      18980-21-7      24539-92-2      24539-93-3  
         24539-94-4      24539-95-5      24539-97-7  
 RL: PRP (Properties)  
         (mass spectrum and N.M.R. of)  
  
 L7      ANSWER 69 OF 83      CAPLUS      COPYRIGHT 2006 ACS on STN  
 AN      1969:24585      CAPLUS  
 DN      70:24585  
 ED      Entered STN: 12 May 1984  
 TI      Solvent-sensitized radiochemical reactions. II.      \*\*\*Fries\*\*\*  
         \*\*\*rearrangements\*\*\*      of aryl esters an aryl amides  
 AU      Bellus, Daniel; Schaffner, Kurt; Hoigne, Juerg  
 CS      Eidg. Tech. Hochsch., Zurich, Switz.  
 SO      Helvetica Chimica Acta (1968), 51(8), 1980-9  
         CODEN: HCACAV; ISSN: 0018-019X  
 DT      Journal  
 LA      German  
 CC      74 (Radiation Chemistry, Photochemistry, and Photographic Processes)  
 AB      In a series of screening expts. p-tolyl acetate, BzOPh, p-tolyl benzoate,  
         acetanilide, and 2-naphthyl acetate have been subjected to  
         .gamma.-radiolysis in aromatic and satd. hydrocarbon solns. Qual., the  
         products formed correspond to those observed also with the resp.

photo-Fries reactions, i.e., hydroxy- and aminoaryl ketones due to rearrangements, and products due to homolytic fission into aryloxy and aniline radicals, resp., were produced. The relatively high G values of conversion in dil. solns. indicate that energy transfer from the solvent is operative. E.g., 0.1M p-tolyl acetate in benzene has a G value of over 0.3 for ortho-rearrangement to 2,1-Ac(HO)C<sub>6</sub>H<sub>3</sub>Me-4(I), and of 0.55 for cresol formation. Kinetic evidence points to different energy requirements of the ortho-rearrangement and the phenol formation, and to more than one excited state of benzene acting as energy donor. The ratio of the observed rate consts. of the energy transfer to self-quenching in benzene is about 80 l. mole<sup>-1</sup> for the ortho-rearrangement to I. The over-all reaction is strongly quenched upon addn. of p-terphenyl. A comparison of the quant. \*\*\*data\*\*\* obtained in this work with available published \*\*\*data\*\*\* reveals differences between benzene-sensitized runs with .gamma.-radiation and photochem. expts. Thus, the ratios of ortho vs. para and amphi rearrangement, and of homolytic fission vs. rearrangements are higher in the solvent-sensitized radiolyses.

ST \*\*\*Fries\*\*\* \*\*\*rearrangements\*\*\* ; \*\*\*rearrangements\*\*\*  
 \*\*\*Fries\*\*\* ; esters aryl; amides aryl; radiolysis solvent sensitized;  
 solvent sensitized radiolysis  
 IT Gamma rays, chemical and physical effects  
 ( \*\*\*Fries\*\*\* \*\*\*rearrangements\*\*\* of aryl compds. in  
 hydrocarbon solns. by)  
 IT Energy transfer  
 (in radiochem. \*\*\*Fries\*\*\* \*\*\*rearrangements\*\*\* of aryl compds.  
 in hydrocarbon solns.)  
 IT Radiolysis  
 (of aryl compds. in hydrocarbon solns.)  
 IT Hydrocarbons, uses and miscellaneous  
 RL: USES (Uses)  
 (radiochem. \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of aryl compds. in)  
 IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
 (radiochem., of aryl compds. in hydrocarbon solns.)  
 IT 71-43-2, uses and miscellaneous  
 RL: USES (Uses)  
 (radiochem. \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of aryl compds. in)  
 IT 93-99-2 103-84-4 140-39-6 614-34-6 1523-11-1  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (radiochem. \*\*\*Fries\*\*\* \*\*\*rearrangements\*\*\* of, in hydrocarbon  
 solns.)

L7 ANSWER 70 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1969:19754 CAPLUS

DN 70:19754

ED Entered STN: 12 May 1984

TI The photo-Fries reaction of aryl esters: effect of solvent on product  
 distribution

AU Plank, Don A.

CS Chem. Res. Lab., Esso Res. and Eng. Co., Baytown, TX, USA

SO Tetrahedron Letters (1968), (52), 5423-6

CODEN: TELEAY; ISSN: 0040-4039

DT Journal

LA English

CC 25 (Noncondensed Aromatic Compounds)

OS CASREACT 70:19754

AB The photo-rearrangements of o-RC<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>Ph (I, R = H, Me) (II, III) in various solvents (C<sub>6</sub>H<sub>12</sub>, Et<sub>2</sub>O, dioxane, C<sub>6</sub>H<sub>6</sub>, iso-PrOH, MeOH, EtOH, tert-BuOH) were carried to 50-90% completion in sealed Vycor tubes using a merry-go-round reactor with 3000 A. lamps. The yield of the \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* products o-RC<sub>6</sub>H<sub>4</sub>COC<sub>6</sub>H<sub>4</sub>OH-o and o-RC<sub>6</sub>H<sub>4</sub>COC<sub>6</sub>H<sub>4</sub>OH-p were detd. by N.M.R. using the relative intensities of Me peaks. Various amts. of PhOH were detected by vapor phase chromatog. The tabulated \*\*\*data\*\*\* indicated that yields of rearrangement products were dependent on the nature of the solvent. Addnl. expts. with II in Et<sub>2</sub>O-MeOH solns. indicated that the yield of PhOH was also solvent dependent. The yields of rearrangement products increased from 36% in Et<sub>2</sub>O to 79% in MeOH but the yield of PhOH decreased with increasing concn. of MeOH. Polar solvents favor rearrangement and non-polar solvents favor phenol formation. The effect is not merely a solvent dependent partitioning process and is not due to viscosity changes. The results are consistent with a mechanism involving two reactive excited states and it

is suggested that the relative stabilities of these two states respond to changes in the polarity of the solvent. The results may be rationalized on the basis of a charge-transfer intermediate but provide no direct evidence for its existence.

ST photolysis phenyl benzoates; phenyl benzoates photolysis; benzoates phenyl photolysis; \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* Ph benzoates; \*\*\*rearrangement\*\*\* Ph benzoates \*\*\*Fries\*\*\*

IT Solvent effects (in \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of phenyl arenecarboxylates)

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* (photochem., of phenyl arenecarboxylates, solvent effect on)

IT 93-99-2 15813-38-4

RL: RCT (Reactant); RACT (Reactant or reagent) ( \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of, solvent effect on)

L7 ANSWER 71 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1969:11491 CAPLUS

DN 70:11491

ED Entered STN: 12 May 1984

TI The photoinduced alcoholysis of 3,4-dihydrocoumarin and related compounds

AU Gutsche, C. David; Oude-Alink, B. A. M.

CS Washington Univ., St. Louis, MO, USA

SO Journal of the American Chemical Society (1968), 90(21), 5855-61

CODEN: JACSAT; ISSN: 0002-7863

DT Journal

LA English

CC 27 (Heterocyclic Compounds (One Hetero Atom))

OS CASREACT 70:11491

AB The reaction of alcs. with 3,4-dihydrocoumarin and related compds. was studied under ordinary conditions ("dark solvolysis") and under photolysis conditions ("photoinduced solvolysis"). The investigation has revealed the following: the photoinduced alcoholysis of 3,4-dihydrocoumarin to an alkyl .beta.-(2-hydroxyphenyl)propionate can be effected with methanol, ethanol, and isopropanol; tert-butanol, however, fails to react and can be employed as a solvent for the photoinduced reaction with other more reactive alcs.; both the higher and lower homologs of 3,4-dihydrocoumarin undergo photoinduced alcoholysis; the higher homolog, 2-oxo-2,3,4,5-tetrahydrobenzoxepin, reacts in fashion comparable to 3,4-dihydrocoumarin and yields an alkyl .gamma.-(2-hydroxyphenyl)-butyrate, while the lower homolog, 2-oxo-2,3-dihydrobenzofuran, reacts in a different fashion and yields the alkyl ether of 2-hydrobenzyl alc.; the rates of the "dark solvolyses" of various 6- and 7-substituted 3,4-dihydrocoumarins are, in accordance with expectations, accelerated by electron-withdrawing groups and decelerated by electron-releasing groups; the photoinduced solvolyses of various 6- and 7-substituted 3,4-dihydrocoumarins show quantum yields which, with one exception, correlate with the pKa\* values for the phenol corresponding to the 3,4-dihydrocoumarin. On the basis of these \*\*\*data\*\*\*, it is postulated that the alcoholyses of 3,4-dihydrocoumarins and 2-oxo-2,3,4,5-tetra-hydrobenzoxepin may be examples of photo-induced \*\*\*Fries\*\*\* \*\*\*rearrangements\*\*\* in which an initially produced spirodiketone reacts with the alc. to form the phenolic ester.

ST coumarins dihydro alcoholysis; photoinduced alcoholysis hydrocoumarins

IT 92-47-7 119-84-6 20920-98-3 20920-99-4 20921-00-0 20921-01-1 20921-02-2 20921-03-3

RL: RCT (Reactant); RACT (Reactant or reagent) (alcoholysis of)

IT 5635-98-3P 20349-89-7P 20862-56-0P 20920-83-6P 20921-04-4P 20921-06-6P 20921-08-8P 20921-09-9P 20921-10-2P 20921-11-3P 20921-12-4P 20921-13-5P 20921-14-6P 20921-15-7P 20921-16-8P 20921-17-9P

RL: SPN (Synthetic preparation); PREP (Preparation) (prepn. of)

L7 ANSWER 72 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1968:505685 CAPLUS

DN 69:105685

ED Entered STN: 12 May 1984

TI Carbonyl group valence vibration in 2-hydroxy-4,6-dimethylisobutyrophenone

AU Arventiev, B.; Gabe, I.; Cascaval, A.

CS Univ. "Al. I. Cuza", Iasi, Rom.

SO Analele Stiintifice ale Universitatii Al. I. Cuza din Iasi, Sectiunea 1c:  
Chimie (1967), 13(1), 53-8  
CODEN: AUZCAZ; ISSN: 0041-9117

DT Journal  
LA French  
CC 22 (Physical Organic Chemistry)  
GI For diagram(s), see printed CA Issue.  
AB Carbonyl vibration frequencies were compared in KBr, CCl<sub>4</sub>, and MeCN for 2-hydroxy-4,6-dimethylbenzophenone (I), 2-methoxy-4,6-dimethylbenzophenone (II), the title compd. (III), 2-hydroxy-4,6-dimethylacetophenone (IV), 2-methoxy-4,6-dimethylacetophenone (V), and 2-hydroxy-4,6-dimethylbutyrophenone (VI). The carbonyl frequency shifts calcd. for I and II indicate that intramol. H-bonding in these compds. is weak in KBr and the strongly polar MeCN, but strong in the weakly polar CCl<sub>4</sub>.  
\*\*\*Data\*\*\* on IV and VI show strong intramol. H-bonding in KBr and CCl<sub>4</sub>, and the presence of both the chelated and nonchelated form in MeCN. Synthesis of III (m. 93-4.degree.) was carried out in 45% yield by  
\*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of the appropriate ester. The isobutyrate (b.p. 128-9.degree.) of 3,5-dimethylphenol was prepd. in 60% yield by reacting isobutyryl chloride with the phenol in pyridine. V (m. 48-9.degree.) was obtained by treating IV with excess Me<sub>2</sub>SO<sub>4</sub> in 40% aq. NaOH.

ST IR isobutyrophenones; isobutyrophenones IR; carbonyl vibrations  
IT Carbonyl group  
(spectrum of, of phenylketones)  
IT 21009-93-8P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

IT 1639-85-6 2929-45-5 4072-20-2 16108-50-2 21009-91-6 21009-92-7  
RL: PRP (Properties)  
(spectrum (ir) of)

L7 ANSWER 73 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1967:411464 CAPLUS  
DN 67:11464  
ED Entered STN: 12 May 1984  
TI Synthesis and local anesthetic activity of 5-(.beta.-alkylaminoethoxy)-1,4-benzodioxanes substituted at position 6 with an alkyl group of four or five carbon atoms

AU Dauksas, V.; Mazuolyte, L.; Puckorius, K.; Audeyute, R.  
CS V. Kapsukas Gos. Univ., Vilnyus, USSR  
SO Zhurnal Organicheskoi Khimii (1967), 3(2), 330-6  
CODEN: ZORKAE; ISSN: 0514-7492

DT Journal  
LA Russian  
CC 28 (Heterocyclic Compounds (More Than One Hetero Atom))  
GI For diagram(s), see printed CA Issue.  
AB Synthesis of the title compds. of general formula I was carried out by treating chloro ethers (I, R = CH<sub>2</sub>CH<sub>2</sub>Cl, R<sub>1</sub> = alkyl) (CA 65: 2251g) with amines (CA 66: 94971e). Acylation of I (R = R<sub>1</sub> = H) gave the corresponding esters, which with AlCl<sub>3</sub> underwent \*\*\*Fries\*\*\*  
\*\*\*rearrangement\*\*\* to hydroxy ketones (I, R = H, R<sub>1</sub> = oxoalkyl substituent). Clemmensen redn. with Zn-HCl gave the corresponding hydroxyalkyls (I, R = H, R<sub>1</sub> = alkyl), which were condensed with ClCH<sub>2</sub>CH<sub>2</sub>Cl in the presence of KOH to chloro ethers (I, R = CH<sub>2</sub>CH<sub>2</sub>Cl, R<sub>1</sub> = alkyl). Exptl. \*\*\*data\*\*\* were tabulated [R, R<sub>1</sub>, % yield, b.p./mm., d<sub>20</sub>, n<sub>D</sub> and(or) m.p. (solvent) given]: H, COPr, 98, 155-7.degree./13, 1.1741, 1.5220; H, iso-PrCO, 89, 138-40.degree./4, 1.1669, 1.5167; H, COBu, 88, 164-6.degree./7, 1.1425, 1.5161; H, iso-BuCO, 85, 136-7.degree./1.5, 1.1405, 1.5120; H, tert-BuCO, 91, 131-2.degree./2, 1.1426, 1.5150; COPr, H, 90, m. 82.5-3.degree. (MeOH); iso-PrCO, H, 85, 60.5-1.0.degree. (ligroine); COBu, H, 73, 165-7.degree./0.1, -, -, m. 98-9.degree. (ligroine); iso-BuCO, H, 62, 162-4.degree./0.1, -, -, m. 59-60.degree. (EtOH-H<sub>2</sub>O); tert-BuCO, H, 55, 152-4.degree./0.2, -, 1.5736; Bu, H, 83, 129-30.degree./0.2, 1.1283, 1.5363; iso-Bu, H, 78, 126-8.degree./0.2, 1.1273, 1.5377; Am, H, 80, 136-8.degree./0.1, 1.1036, 1.5311; iso-Am, H, 79, 146-7.degree./0.5, 1.1009, 1.5312; neo-Am, H, 78, 126-7.degree./0.2, 1.1283, 1.5382; Bu, CH<sub>2</sub>CH<sub>2</sub>Cl, 76, 148-50.degree./0.2, 1.1656, 1.5295; iso-Bu, CH<sub>2</sub>CH<sub>2</sub>Cl, 72, 145-6.degree./0.3, 1.1588, 1.5319; Am, CH<sub>2</sub>CH<sub>2</sub>Cl, 74, 155-6.degree./0.2, 1.1411, 1.5266; iso-Am, CH<sub>2</sub>CH<sub>2</sub>Cl, 79, 148-50.degree./0.1, 1.1369, 1.5252; neo-Am, CH<sub>2</sub>CH<sub>2</sub>Cl, 74, 146-8.degree./0.2, 1.1466, 1.5281; Bu, CH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub>, 66, 169-70.degree./0.1,

-, 1.5295 [HCl salt m. 124.5-5.0.degree. (Me2CO)]; Bu, CH2CH2NHMe, 72, 157-9.degree./0.2, -, 1.5216 (reineckate m. 176.5-7.5.degree.); Bu, CH2CH2NHET, 87, 167-8.degree./0.05 -, 1.5182 (reineckate m. 122.0-2.5.degree.); Bu, CH2CH2NMe2, 82, 158-60.degree./0.1, -, 1.5160 [HCl salt m. 151-1.5.degree. (Me2CO)]; Bu, CH2CH2NET2, 78, 163-5.degree./0.2, -, 1.5097 [HCl salt m. 74-6.degree. (EtOH-ether)]; Bu, CH2CH2NC5H10, 82, 180-1.degree./0.3, -, 1.5268 [HCl salt m. 134-6.degree. (Me2CO)]; iso-Bu, CH2CH2NH2, 64, 166-7.degree./0.15, -, 1.5317 [HCl salt m. 175.degree. (Me2CO)]; iso-Bu, CH2CH2NHMe, 75, 142-3.degree./0.05, -, 1.5215 [HCl salt m. 134-5.degree. (Me2CO)]; iso-Bu, CH2CH2NHET, 85, 164-5.degree./0.1, -, 1.5185 [HCl salt m. 128-8.5.degree. (Me2CO)]; iso-Bu, CH2CH2NMe2, 73, 153-5.degree./0.1, -, 1.5166 [HCl salt m. 171.5-2.5.degree. (Me2CO)]; iso-Bu, CH2CH2NET2, 78, 164-5.degree./0.1, -, 1.5115 (reineckate m. 92-3.degree.); iso-Bu, CH2CH2NC5H10, 93, 187-9.degree./0.2, -, 1.5283 (reineckate m. 129-30.5.degree.); Am, CH2CH2NH, 70, 170-1.degree./0.1, -, 1.5311 (HCl salt m. 130.5-2.5.degree. (CCl4-ether)); Am, CH2CH2NHMe, 65, 168-70.degree./0.1, -, 1.5221 (reineckate m. 150-1.degree.); Am, CH2CH2NHET, 64, 165-7.degree./0.2, -, 1.5153 (reineckate m. 123-4.degree.); Am, CH2CH2NMe2, 78, 169-71.degree./0.2, -, 1.5139 (HCl salt m. 108-10.degree. (CCl4-ether)); Am, CH2CH2NET2, 81, 179-81.degree./0.2, -, 1.5116 (reineckate 116-16.5.degree.); Am, CH2CH5NC5H10, 78, 198-200.degree./0.2, -, 1.5252 [HCl salt m. 130-2.degree. (CCl4-ether)]; iso-Am, CH2CH2NH2, 63, 162-4.degree./0.1, -, 1.5290 [HCl salt m. 161-2.5.degree. (CCl4-ether)]; iso-Am, CH2CH2NHMe, 64, 162-3.degree./0.1, -, 1.5181 (reineckate m. 129.5-30.5.degree.); iso-Am, CH2CH2NHET, 70, 159-61.degree./0.1, -, 1.5140 (reineckate m. 131.5-3.0.degree.); iso-Bu, CH2CH2NMe2, 86, 171-3.0.degree./0.2, -, 1.5128 [HCl salt m. 115-16.5.degree. (CCl4-ether)]; iso-Bu, CH2CH2NC5H10, 85, 193-5.degree./0.15, -, 1.5245 [HCl salt m. 132-4.degree. (CCl4-ether)]; neo-Am, CH2CH2NH2, 56, 158-60.degree./0.1, -, 1.5364 (reineckate m. 124-6.degree.); neo-Am, CH2CH2NHMe, 66, 158-60.degree./0.1, -, 1.5265 (reineckate m. 148-50.degree.); neo-Am, CH2CH2NHET, 87, 158-60.degree./0.05, -, 1.5206 (reineckate m. 179.5-80.degree.); neo-Am, CH2CH2NMe2, 75, 162-4.degree./0.5, -, 1.520 (reineckate m. 133-5.5.degree.); neo-Am, CH2CH2NET2, 70, 173-5.degree./0.1, -, 1.5155 (reineckate m. 130-2.degree.); neo-Am, CH2CH2NC5H10, 77, 188-90.degree./0.1, -, 1.5320 (reineckate m. 139-41.degree.). Pharmacol. study of the amino ethers showed that the compds. with R = Bu had greater activity than compds. with R = Pr, or R = Et. For example I (R = Bu, R1 = CH2CH2NHMe) was 10 times as active as I (R = Pr, R1 = CH2CH2NHMe) and 40 times as active as I (R = Et, R1 = CH2CH2NHMe); however further extension of R size decreased the activity.

ST ANESTHETICS LOCAL; LOCAL ANESTHETICS; DIOXANES BENZO; BENZODIOXANES

IT Anesthetics

(1,4-benzodioxan derivs. as)

IT Ammines

RL: RCT (Reactant); RACT (Reactant or reagent)  
(chromium)

IT 493-09-4D, 1,4-Benzodioxan, derivs.

RL: RCT (Reactant); RACT (Reactant or reagent)  
(as anesthetics)

IT	14597-63-8P	14597-64-9P	14597-65-0P	14597-66-1P	14597-67-2P
	14597-68-3P	14597-69-4P	14597-70-7P	14597-71-8P	14597-72-9P
	14597-73-0P	14597-74-1P	14597-75-2P	14597-76-3P	14597-77-4P
	14597-78-5P	14597-79-6P	14597-80-9P	14597-81-0P	14597-82-1P
	14597-83-2P	14597-84-3P	14597-85-4P	14597-86-5P	14597-87-6P
	14597-88-7P	14597-89-8P	14597-90-1P	14597-91-2P	14598-06-2P
	14598-07-3P	14598-08-4P	14598-09-5P	14598-10-8P	14598-11-9P
	14598-12-0P	14598-13-1P	14598-14-2P	14598-15-3P	14598-16-4P
	14598-17-5P	14598-18-6P	14598-19-7P	14598-20-0P	14598-21-1P
	14598-22-2P	14598-23-3P	14716-81-5P	14716-82-6P	14716-83-7P
	14717-81-8P	14717-82-9P	14717-83-0P	14717-84-1P	14718-10-6P
	14718-11-7P	14718-12-8P	14718-13-9P	14718-14-0P	14718-15-1P
	14718-16-2P	14718-17-3P	14718-18-4P	14718-34-4P	17967-40-7P
	17967-41-8P	17967-42-9P	17967-43-0P	17967-44-1P	17967-45-2P
	17967-46-3P	17967-47-4P	17967-48-5P	18284-60-1P	18284-61-2P
	18284-62-3P	18284-63-4P	18284-71-4P	18702-19-7P	18702-20-0P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

DN 66:37796  
 ED Entered STN: 12 May 1984  
 TI Oxotetrahydrocarbazoles and their transformation into azepinoindole derivatives  
 AU Teuber, Hans J.; Cornelius, Dieter; Woelcke, Uwe  
 CS Univ. Frankfurt/M., Frankfurt/M., Germany  
 SO Ann. Chem., Justus Liebig's (1966), 696, 116-35  
 CODEN: ACJLAQ  
 DT Journal  
 LA German  
 CC 28 (Heterocyclic Compounds (More Than One Hetero Atom))  
 OS CASREACT 66:37796  
 AB Oxotetrahydrocarbazoles (Ia) are obtainable from the monophenylhydrazones of 1,2- and 1,3-cyclohexanediones by Fischer-Borsche synthesis and from 2- and 3-hydroxycarbazoles (CA 60, 10633c) by Birch redn. The prepn. is now described of addnl. Ia and their conversion via their oximes into indoles with an attached azepine ring. 2-(2,4-Dinitrophenyl)-1,3-cyclohexanedione (I) (Kuehne, CA 57, 4628d) (14 g.) in 150 cc. MeOH hydrogenated over Raney Ni at 50-60.degree. and 100 atm. gave 8 g. 7-amino-4-oxo-1,2,3,4-tetrahydrocarbazole hydrate (II.H<sub>2</sub>O), losing its H<sub>2</sub>O at 125.degree. and m. 197-8.degree.; heating in vacuo at 100.degree. gave anhyd. II; perchlorate explodes at 285.degree.. II kept overnight with C<sub>5</sub>H<sub>5</sub>N-Ac<sub>2</sub>O, and the soln. dild. with water and extd. with Et<sub>2</sub>O gave 7-acetamido analog (III) of II sesquihydrate, decompd. at >360.degree. (MeOH-water), which heated in vacuo at 100.degree. gave anhyd. III. II on diazotization and boiling or on cleavage of the amino group with stannite gave no definite compd. With K nitrosodisulfonate, II was first colored red and then deposited brown flakes. 1,3-Cyclohexanedione did not react with 2-fluoro-or 2-iodonitrobenzene in 20% aq. KOH or with KOMe in MeOH. A soln. of 1.4 g. I in 140 cc. MeOH-Et<sub>2</sub>O added to a CH<sub>2</sub>N<sub>2</sub> soln. (from 5 g. H<sub>2</sub>NCONMeNO) in 50 cc. MeOH-Et<sub>2</sub>O and after gas evolution ceased and after 1 hr. the soln. concd. gave 1.2 g. 2-(2,4-dinitrophenyl)-1-methoxy-1-cyclohexen-3-one (IV), m. 164-5.degree. (MeOH). Methylation of I with MeI or KOMe in MeOH or Me<sub>2</sub>CO also gave exclusively the O-Me deriv. IV; no C-Me deriv. was formed. 1,3-Cyclohexanedione (11 g.) dissolved in 100 cc. water by heating and the soln. treated with a NaOAc-buffered soln. of 19 g. 4-EtOC<sub>6</sub>H<sub>4</sub>NHNH<sub>2</sub>.HCl (V.HCl) in 110 cc. water gave a reddish resin, which triturated with EtOH gave 9 g. mono-4-ethoxyphenylhydrazone (VI), m. 167-8.degree. (EtOH-water, followed by a C<sub>6</sub>H<sub>6</sub> wash); use of free V gave lower yields. A soln. of 12.5 g. VI in 60 cc. AcOH refluxed 0.5 hr. and evapd. in vacuo gave 10-15% 6-ethoxy-4-oxo-1,2,3,4-tetrahydrocarbazole (VII), m. 258-9.degree. (aq. EtOH with C). VII (1.5 g.) in 200 cc. C<sub>6</sub>H<sub>6</sub> pretreated with AlCl<sub>3</sub> refluxed 20 hrs. with 6 g. AlCl<sub>3</sub> until no more HCl evolved and the mixt. poured onto ice and acidified with concd. HCl until dissoln. of the Al(OH)<sub>3</sub> sludge gave 1 g. 6-hydroxy analog of VII, m. 260.degree. (water of EtOH). 4,6-Diethylresorcinol (obtained from resorcinol diacetate by \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*, followed by Clemmensen redn.) hydrogenated in aq. NaOH over Raney Ni at 50.degree. and 50 atm. gave 4,6-diethyl-1,3-cyclohexanedione (VIII). VIII (17 g.) in 60 cc. EtOH refluxed 0.5 hr. with 11 g. PhNHNH<sub>2</sub> and cooled gave 17 g. monophenylhydrazone (IX), m. 166-8.degree. (EtOH). IX (13 g.) heated 1 hr. on a steam bath with 50 cc. H<sub>2</sub>SO<sub>4</sub> and 125 cc. water and the mixt. dild. with 500 cc. H<sub>2</sub>SO<sub>4</sub> and 125 cc. water and the mixt. dild. with 500 c. water deposited 4.8 g. 1,3-diethyl-4-oxo-1,2,3,4-tetrahydrocarbazole, m. 222-3.degree. (EtOH with C). To 400 cc. water satd. with SO<sub>2</sub> was added 20 g. 2,6-dimethyl-p-benzoquinone and the mixt. heated 1 hr. on a water bath and cooled to give 14 g. 2,6-dimethylhydroquinone (IX), m. 150.degree., which added to soln. of 5 g. Na in 100 cc. abs. MeOH, the soln. refluxed with 40 g. MeI until disappearance of the alk. reaction and evapd., the residue treated with 2N NaOH and extd. with Et<sub>2</sub>O, and the ext. washed with water, dried, and fractionated gave 10 g. di-Me ether (X) of IX, b<sub>25</sub> 128-130.degree.. To 250 cc. liquid NH<sub>3</sub> was added 10 g. X in 200 cc. Et<sub>2</sub>O, followed portionwise by 3.5 g. Li with stirring, the mixt. stirred until dissoln., the soln. treated dropwise with EtOH until disappearance of the blue color, kept several hrs. until the amt. NH<sub>3</sub> volatilized, and dild. with water, and the Et<sub>2</sub>O layer sepd., washed with water, dried, and fractionated to give 7-8 g. XI, b<sub>22</sub> 105-8.degree.. XI (7 g.) in 500 cc. Et<sub>2</sub>O acidified with 2 cc. concd. HCl, stirred 1 hr., neutralized with aq. NaHCO<sub>3</sub>, washed with water, and evapd. gave 4 g. XII, m. 86-7.5.degree. (ligroine). To a soln. of 3.5 g. XII in 350 cc. water and 50 cc. EtOH was added dropwise a soln. of 2.7 g. PhNHNH<sub>2</sub> in 175 cc. water and 25 cc. EtOH to give 4 g. XIII, decompd. at 106.degree. (EtOH-water). XIII (4 g.)

heated 1 hr. on a water bath with 20 cc. H<sub>2</sub>SO<sub>4</sub> and 50 cc. water and the mixt cooled and dild. with 250 cc. water gave <50% 2,4-dimethyl-3-oxo-1,2,3,4-tetrahydrocarbazole (XIV), m. 123-5.degree. (EtOH-water with C). In an attempted Wolff-Kishner redn. of XIV, a mixt. of 2.8 g. KOH, 15 cc. (CH<sub>2</sub>OH)<sub>2</sub>, 2.1 g. XIV, and 2.5 cc. N<sub>2</sub>H<sub>4</sub>.H<sub>2</sub>O was refluxed 5 hrs. and cooled to give only colorless azine of XIV m. 183-4.degree. (EtOH). A soln. of 22 g. 4-benzoyloxycyclohexanone in 200 cc. EtOH treated with 11 g. PhNHNH<sub>2</sub> and after the reaction subsided 22 cc. concd. H<sub>2</sub>SO<sub>4</sub> added gave 22 g. 3-benzoyloxy-1,2,3,4-tetrahydrocarbazole (XV), m. 193.degree. (EtOH with C). A soln. of 14.5 g. XV in 600 cc. hot EtOH refluxed 10-12 hrs. with 15 g. KOH in 30 cc. water and concd., the residue dild. with water, and the ppt. extd. (Soxhlet) with petroleum ether gave 8 g. 3-hydroxy analog of XV, m. 149-150.degree.. 1,4-Cyclohexanedione bisphenylhydrazone (XVI) (14 g.) in 250 cc. EtOH and 100 cc. 3N H<sub>2</sub>SO<sub>4</sub> heated 1.5 hrs. on a steam bath, EtOH distd., and the residual soln. dild. to 1 l. with water and let stand 12 hrs., deposited a reddish ppt. (A); the filtrate neutralized with NaOH, the gray ppt. (5 g.) dissolved in 50 cc. boiling EtOH gave 1.1 g. 3-phenylhydrazinocarbazole (XVII), m. 258-9.degree.; ppt. A (.apprx.6 g.) extd. (Soxhlet) with CHCl<sub>3</sub> (1.5 g. dissolved) and the red ext. filtered through Al<sub>2</sub>O<sub>3</sub> gave 480 mg. unidentified compd., m. 246-8.degree. (EtOH); elution of the Al<sub>2</sub>O<sub>3</sub> with Me<sub>2</sub>CO gave 3-hydroxy-carbazole, m.p. and mixed m.p. 258-260.degree. (xylene). XVI (2 g.) heated 1.5 hrs. on a steam bath with 8 cc. (H<sub>2</sub>SO<sub>4</sub> and 20 cc. water and the mixt. dild. with 100 cc. water gave 350 mg. known indolo[3,2-b] carbazole, m. >360.degree. (HCONMe<sub>2</sub>). XVII heated with BzH gave only unchanged XVII; the mixt. treated dropwise with concd. HCl and the immediately pptd. reddish ppt. filtered off and washed with petroleum ether (to remove red impurities) gave N-benzylidene deriv. of 3-aminocarbazole, m. 209-210.degree. (EtOH water). 2-Oxo-1,2,3,4-tetrahydrocarbazole (XVIIa) (1.85 g.) mixed with 4 cc. MeCOCH<sub>2</sub>CH(OMe)<sub>2</sub> in a mortar, 1 cc. concd. HCl added (dark color formed), the mixt. ground 20 min. (no crystn. occurred), treated again with 1 cc. concd. HCl, and ground, after 12 hrs. the solid chromatographed on Al<sub>2</sub>O<sub>3</sub> with CHCl<sub>3</sub> (a red violet zone migrated with the front), and the eluate of this zone evapd. gave .apprx.40% XVIII, almost black crystals, m. 154-5.degree. (EtOH), insol. in alkali, difficultly sol. in mineral acids; oxime decompd. 222.degree. (EtOH). A soln. of 1 g. 4-oxo-1,2,3,4-tetrahydrocarbazole (XVIIIa) in 10 cc. concd. H<sub>2</sub>SO<sub>4</sub> layered over with 20 cc. CHCl<sub>3</sub>, 0.39 g. NaN<sub>3</sub> added with stirring and ice cooling (no gas evolution was observed even at 40.degree.), and the mixt. added dropwise to 10 g. ice gave 1.3 g. XIX, beginning to melt at 140.degree. with decompn.; XIX was also obtained without addn. of NaN<sub>3</sub>. XIX (1 g.) suspended in 3-4 cc. water and buffered with NaOAc gave after recrystn. from water 0.72 g. XX (SO<sub>3</sub>H in 6- or 7-position), decompd. at 280-90.degree. (H<sub>2</sub>O). XVIIIa oxime (5 g.) in 150 cc. polyphosphoric acid heated and stirred 10 min. at 130-40.degree., cooled, and poured into 750 cc. water, the amorphous pps. isolated and stirred with 50 cc. 2N NaOH plus 60 cc. EtOH until only a little resin remained undissolved, the soln. concd. in vacuo (to remove EtOH), and the oil which sepd. triturated with EtOH gave 1.7 g. XXI ethanolate, m. 210.degree. (EtOH). XXI (200 mg.) boiled 15 hrs. with 1.5 g. Ba(OH)<sub>2</sub> in 25 cc. water gave after neutralization with H<sub>2</sub>SO<sub>4</sub> quant. unchanged XXI. No lactam cleavage was achieved even with concd. HCl or MeOH-HCl. No H was absorbed when XXI was hydrogenated over Pt or Pd-C in MeOH or AcOH. To 100 mg. XXI in 25 cc. 2N HCl was added dropwise slowly 35 mg. NaNO<sub>2</sub> in 5 cc. water at -5.degree. and the mixt. stirred 1 hr. at 0.degree. and finally 1 hr. at room temp. to give 40 mg. XXII, explodes at 180.degree. (EtOH). 1-Oxo-1,2,3,4-tetrahydrocarbazole (300 mg.) in 10 g. polyphosphoric acid heated 10 min. at 120-30.degree. and poured into 50 cc. water gave 240 mg. XXIII, m. 224-7.degree. (sec-BuOH). XXIII (100 mg.) boiled 15 hrs. with 750 mg. Ba(OH)<sub>2</sub> in 15 cc. water and the soln. filtered, neutralized with 2N H<sub>2</sub>SO<sub>4</sub>, filtered, and concd. gave 90 mg. XXIV, m. 255-260.degree. (decompn.) (50% EtOH), its uv spectrum resembling that of an equimol. mixt. of 2-indolecarboxylic acid and BuNH<sub>2</sub>; XXIV mixed with quartz sand and heated above its m.p. (decarboxylation) gave in contrast with XXIII an intense red-violet Fichtenspan reaction. To concd. H<sub>2</sub>SO<sub>4</sub> (2 cc.) covered with 11 cc. CHCl<sub>3</sub> was added 0.2 g. slightly moistened NaN<sub>3</sub> with stirring and ice cooling, followed by 0.5 g. XVIIa in 6 cc. CHCl<sub>3</sub> at 0.degree. (19 cc. N evolved), when N evolution subsided the mixt. stirred at room temp. until the end of N evolution, the H<sub>2</sub>SO<sub>4</sub> phase sepd. and added dropwise to 10 g. ice, the ppt. isolated, dried, and extd. with boiling CHCl<sub>3</sub>, and the combined exts. concd. gave 150 mg. XXV, m. 228-35.degree. (darkening) (CHCl<sub>3</sub>), showing no active methylene group with Na 1,2-naphthoquinone-4-

sulfonate; at high temps. (40-50.degree.), the yield of XXV decreased considerably. Hydrolysis of XXV with 20% HCl at 150.degree. and with NaOH in boiling AmOH gave no cryst. product. XXV (100 mg.) boiled 15 hrs. with 750 mg. Ba(OH)2 in 15 cc. water and the soln. filtered, dild. with 30 cc. water, neutralized (.apprx.3 cc. 3N H2SO4), filtered, and concd. gave 100 mg. XXVI, decompd. at 210.degree. (50% EtOH); XXVI was not nitrosated indil. HCl or with alcoholate and AmONO and did not condense with BzH and alcoholate in boiling MeOH. An ice-cold soln. of 2 g. XVIIa oxime in 20 cc. H2SO4 added dropwise to 10 cc. hot (120.degree.) H2SO4 (attempted Beckmann rearrangement), the soln. cooled. poured onto 20 g. ice, and buffered with NaOAc, the cryst. ppt. (1.9. g.) dissolved in water, repptd. with concd. HCl, and crystd. twice from water gave a trisulfonic acid mono-Na salt. C12H11 N2O10S3Na, m. >300.degree., losing 3 mols. water when heated in 110.degree. in vacuo. 3-Oxo-1,2,3,4-tetrahydrocarbazole (4 g.) in 64 cc. CHCl3 added to 16 cc. H2SO4 layered over with 88 cc. CHCl3 with stirring and ice-NaCl cooling, the mixt. treated portionwise with 1.6 g. moist NaN3 and stirred 2 hrs. at 0.degree. and then at room temp. until N evolution ceased (200 cc. N evolved), the acid layer sepd. and poured onto 100 g. ice, the ppt. dissolved in a little hot sec-BuOH, and the soln. filtered from a gray residue gave 1.5 g. XXVII or XXVIII, m. 205-8.degree. (coloring above 190.degree.) (sec-BuOH). XXVII or XXVIII (600 mg.) boiled 15 hrs. with 4.5 g. Ba(OH)2 in 90 cc. water, the soln. dild. with 180 cc. water, filtered, neutralized with .apprx.10 cc.2N H2SO4, filtered, and concd., and the ppt. (290 mg.) filtered off and dissolved in water, and the soln. concd. and dild. with Me2CO gave XXIX or XXX, m. 225-7.degree. (coloring above 200.degree.). Pertinent uv, ir, and N.M.R. \*\*\*data\*\*\* are given and the uv spectral of some of the compds. are recorded.

IT Addition reactions

(1,3-dipolar)

IT 14384-38-4P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and N.M.R. of)

IT 14482-89-4P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and spectrum (N.M.R. and uv) of)

IT 14384-25-9P 14384-36-2P 14384-39-5P 14482-87-2P 14482-88-3P  
14482-90-7P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and spectrum (uv) of)

IT 654-42-2P 6336-32-9P 14384-13-5P 14384-21-5P 14384-22-6P

14384-23-7P 14384-24-8P 14384-27-1P 14384-28-2P 14384-29-3P

14384-30-6P 14384-31-7P 14384-32-8P 14384-33-9P 14384-34-0P

14384-35-1P 14384-37-3P 14384-40-8P 14384-41-9P 14384-42-0P

14384-43-1P 14384-44-2P 14470-56-5P 14538-50-2P 14621-60-4P

14980-64-4P 17188-99-7P 17189-00-3P 17339-38-7P 17339-39-8P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

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AN 1965:15177 CAPLUS

DN 62:15177

OREF 62:2733a-b

ED Entered STN: 22 Apr 2001

TI \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* of aryl arylacetates. I

AU Thoi, Le Van; Hoang, Ngugen Van

SO Khao-Cuu Nien-San Khao-Hoc Dai-Hoc Duong (1962) 67-73

CODEN: AFSSAB; ISSN: 0558-1664

DT Journal

LA French

CC 35 (Noncondensed Aromatic Compounds)

AB The \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\* has been extended to some aryl esters of arylacetic acid. Ph phenylacetate (I) was prepd. by refluxing PhCH2COCl with PhOH in a 1:1 ratio in benzene for 1 hr.; m. 42.degree., yield 76%; p-tolyl ester (II) m. 75.degree., 82% yield; m-tolyl ester m. 50.degree., 77% yield; .omicron.-tolyl ester m. 42.degree., 60% yield; .beta.-naphthyl ester m. 72.degree., 72% yield. I (10 g.) in 50 ml. PhNO2 was treated slowly with 6.3 g. AlCl3 and after 24 hrs. water was added and the mixt. steam-distd. to give 4% .omicron.-hydroxydeoxybenzoin, m. 55.degree.; orange 2,4-dinitrophenylhydrazine m. 214-15.degree.. The residue contained 65% p-hydroxydeoxybenzoin, m. 142.degree.; dark red 2,4-dinitrophenylhydrazine m. 216.degree.. Rearrangement at 140.degree. for 3 hrs. yielded 60% ortho and 10% para isomers, resp. Similar cold



treatment of II gave only 80% 2-hydroxy-5-methyldeoxybenzoin, m. 65.degree.; orange 2,4-dinitrophenylhydrazone m. 218.degree..  
\*\*\*Data\*\*\* are given for the IR spectra of the deoxybenzoins. The dinitrophenylhydrazones show strong absorption at 381-90 m.mu..

IT Spectra, infrared  
Spectra, visible and ultraviolet  
(of 2'-hydroxy-2-phenylacetophenone and derivs.)

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
(of aryl phenylacetates)

IT 101-94-0, Acetic acid, phenyl-, p-tolyl ester 122-27-0, Acetic acid, phenyl-, m-tolyl ester 722-01-0, Acetic acid, phenyl-, phenyl ester 2491-29-4, Acetic acid, phenyl-, o-tolyl ester 2491-30-7, 2-Naphthol, phenylacetate 2491-30-7, Acetic acid, phenyl-, 2-naphthyl ester 2491-31-8, Acetophenone, 2'-hydroxy-2-phenyl- 2491-32-9, Acetophenone, 4'-hydroxy-2-phenyl- 2491-33-0, Acetophenone, 4'-hydroxy-2-phenyl-, (2,4-dinitrophenyl)hydrazone 2491-34-1, Acetophenone, 2'-hydroxy-4'-methyl-2-phenyl- 2950-55-2, Acetophenone, 2'-hydroxy-2-phenyl-, (2,4-dinitrophenyl)hydrazone 7294-78-2, Acetophenone, 2'-hydroxy-4'-methyl-2-phenyl-, (2,4-dinitrophenyl)hydrazone (prepn. of)

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AN 1963:454759 CAPLUS

DN 59:54759

OREF 59:9960c-h,9961a-h,9962a

ED Entered STN: 22 Apr 2001

TI Carboxyflavone, phenacylphthalide, and chromono[3,2-c]isocoumarin derivatives

AU Venturella, Pietro; Bellino, Aurora

CS Univ. Palermo, Palermo, Italy

SO Annali di Chimica (Rome, Italy) (1960), 50, 875-914

CODEN: ANCRAI; ISSN: 0003-4592

DT Journal

LA Italian

CC 37 (Heterocyclic Compounds (One Hetero Atom))

GI For diagram(s), see printed CA Issue.

AB Biol. interest in compds. contg. flavone and coumarin nuclei stimulated prepn. of unknown compds. contg. carboxylic groups in the chromone benzene ring or in the phenyl group of the flavones. \*\*\*Rearrangement\*\*\* with AlCl3 according to \*\*\*Fries\*\*\* converted p-AcOC6H4CO2H into 2,5-HO(HO2C)C6H3COME (I). I (0.01 mole) and 0.01 mole aldehyde (II, R = OCH2OMe, R1 = R2 = R3 = H) in 25 ml. alc. kept 24 hrs. at 20.degree. with 3 g. KOH in 6 ml. H2O, dild. with 50 ml. ice-H2O, acidified slowly with 1:5 HCl-H2O and the H2O-washed ppt. (3 g.) crystd. from AcOH or alc. gave III (R = OCH2OMe, R1 = R2 = R3 = H) (IV), m. 203.degree., giving pos. citroboric and FeCl3 reactions. IV (0.5 g.) heated on a steam bath with 20 ml. AcOH, the soln. boiled 2 or 3 min. with 2 ml. 1:6 H2SO4-H2O, the cold soln. poured into 100 ml. ice-H2O, and the ppt. recrystd. (AcOH) gave III (R = OH, R1 = R2 = R3 = H) (V), m. 241-2.degree. (decompn.). IV (1.0 g.) in 15 ml. alc. treated with 0.5 g. KOH in 8 ml. alc., the warm soln. treated with 2 ml. 33% H2O2, the decolorized soln. kept 3.4 hrs., dild. with ice-H2O, and acidified with dil. HCl, and the flavonol crystd. from alc. or AcOH gave yellow crystals of VI (R = OCH2OMe, R1 = R2 = R3 = H) (VII), m. 187-9.degree. (decompn.), giving yellow and brown colors with Mg-HCl and FeCl3, resp. VII (0.2 g.) in 15 ml. AcOH e heated on a steam bath, the hot soln. heated several min. with 0.3 ml. 1:6 H2SO4-H2O, the greenish yellow soln. poured into 50 ml. ice-H2O, and the H2O-washed, acid-free product crystd. (alc.) gave VI (R = OH, R1 = R2 = R3 = H) (VIII), m. 26870.degree.. Similarly, II (R = R3 = H, R1 = OMe, R2 = OCH2OMe) and II (R = H, R1 = R3 = OMe, R2 = OCH2OMe) were condensed with I to give III (R = R3 = H, R1 = OMe, R2 = OCH2OMe) (Villa), m. 184-5.degree., and III (R = H, R1 = R3 = OMe, R2 = OCH2OMe), m. 200-1.degree., sapond. to the corresponding III (R = R1 = H, R3 = OMe, R2 = OH), m. 240-1.degree., and III (R = H, R1 = R2 = OMe, R2 = OH), m. 246-7.degree.. Conversion of VIIIA with alk. H2O2 gave VI (R = R3 = H, R1 = OMe, R2 = OCH2OMe), m. 214-15.degree., sapond. to VI (R1 = R3 = H, R1 = OMe, R2 = OH), m. 325-6.degree. (decompn.). Oxidn. of III (R = H, R1 = R3 = OMe, R2 = OCH2OMe or OH) with alk. H2O2 gave VI (R = H, R1 = R3 = OMe, R2 = OH), m. 303-4.degree.. The ultraviolet spectra of the carboxychalcones and carboxyflavonols were very similar to those of chalcones and flavonols in general. III and VI showed infrared bands at 1695, 1640, and 1625 cm.-1 and a band at 3250 cm.-1 (attributed to the OH group in III and VI

where R = OH). Compds. contg. a CO<sub>2</sub>H group in the phenyl nucleus of the flavones were synthesized by condensation of 2-OHCC<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>H (IX) with acetophenones (X). IX and X were prepd. by published methods. IX (1.5g.) and 1.36 g. X(R = R<sub>1</sub> = R<sub>2</sub> = H) in 20ml. alc. kept 12-24 hrs. at 20.degree. with 3 g. KOH in 6 ml. H<sub>2</sub>O and dild. with H<sub>2</sub>O, the soln. acidified with 1:5 HCl-H<sub>2</sub>O, and the H<sub>2</sub>O washed, acid-free ppt. crystd. (boiling alc.) gave XI (R<sub>1</sub> = R<sub>2</sub> = R<sub>3</sub> = H) (XII), m. 144-5.degree., giving a red-brown FeCl<sub>3</sub> reaction and yellow halochromy with concd. H<sub>2</sub>SO<sub>4</sub>, but neg. chromatic reactions with citroboric and Mg-HCl reagents. Similarly prepd, from 1.5 g. IX and 1.20 g. PhAc was the known 3-phenacylphthalide (XIII), m. 139-40.degree. (alc.). The infrared spectra of XII and XIII showed characteristic phthalide CO bands at 1770 and 1760 cm.<sup>-1</sup> and bands at 1630 and 1675 cm.<sup>-1</sup> characteristic of CO groups conjugated with a phenyl group. XIII (1.0 g.) in 5 ml. MeOH and 20 ml. 10% NaOH heated and the cooled soln. treated slowly (with cooling, H<sub>2</sub>O bath) with 4 ml. 15% H<sub>2</sub>O<sub>2</sub>, the mixt. refrigerated 16 hrs., dild. with ice-H<sub>2</sub>O, and acidified with HCl, and the dried ppt. crystd. (C<sub>6</sub>H<sub>6</sub>N-MeOH) gave 0.5 g. chromono[3,2-c]isocoumarin (XIV), m. 275-6.degree., giving a green-yellow color in alc. HCl and Mg but no reaction with alc. FeCl<sub>3</sub> [ $\lambda$ . 236, 252, 306, 316, 334, 350 m. $\mu$ . (alc.),  $\lambda$ . 248, 300, 388 m. $\mu$ . (0.1N NaOH), attributable to opening of the lactone ring with formation of the corresponding acid]. XIII (0.5 g.) in 280 ml. dry Me<sub>2</sub>CO refluxed 80-90 hrs. with 2 ml. Me<sub>2</sub>SO<sub>4</sub> and 4 g. dry K<sub>2</sub>CO<sub>3</sub>, the filtered soln. evapd., the residue triturated with dil. NH<sub>4</sub>OH, and the clear yellow solid crystd. (alc.) gave 3-methoxy-2'-carbomethoxyflavone, m. 05-6.degree., giving no color with alc. FeCl<sub>3</sub>, but giving a pos. reaction with Mg and alc. HCl. The flavone (0.2 g.) refluxed 1 hr. with 8 ml. 5% KOH, the residue on evapn. taken up in a min. of H<sub>2</sub>O, acidified with dil. HCl, and refrigerated several hrs., the ppt. extd. with Et<sub>2</sub>O, the ext. shaken twice with 10% aq. NaHCO<sub>3</sub>, the alk. soln. acidified slowly with dil. HCl and extd. with Et<sub>2</sub>O, and the oily product crystd. gradually from CHCl<sub>3</sub> gave 3-methoxy-2'-carboxyflavone (XV), m. 164-5.degree.. XV (0.2 g.) refluxed 30 min. with 0.05 g. Cu powder in 2.5 ml. quinoline, the cooled mixt. taken up in Et<sub>2</sub>O, the filtered soln. shaken repeatedly with 2N HCl, and the dried Et<sub>2</sub>O evapd. gave 3-methoxyflavone, m. 107.degree., identical with a sample prepd. according to Kostanecki and Lampe [Ber. 37, 778(1904)]. IX (1.5 g.) and 1.66 g. X(R = R<sub>2</sub> = H, R<sub>1</sub> = MeO) condensed gave XI (R = R<sub>2</sub> = H, R<sub>1</sub> = OMe) (XVI), m. 134-5.degree. (alc.), giving red-brown and yellow coloration with alc. FeCl<sub>3</sub> and concd. H<sub>2</sub>SO<sub>4</sub>; Ac deriv. m. 154-5.degree.. Similarly prepd. were XI (R = R<sub>1</sub> = H, R<sub>2</sub> = OMe) (XVII), m. 136-7.degree., and XI (R<sub>2</sub> = H, R = R<sub>1</sub> = OMe) (XVIII), m. 178-9.degree.. The ultraviolet absorption max. of the 3phenylphthalides showed a characteristic band at 280 m. $\mu$ ., shifted to 310 m. $\mu$ . in 0.1N NaOH by opening of the phthalide ring and formation of the corresponding chalcone salt. The \*\*\*data\*\*\* are tabulated [phthalide,  $\lambda$ . in m. $\mu$ . (log  $\epsilon$ ., alc.) and  $\lambda$ . in m. $\mu$ . (log  $\epsilon$ ., 0.1N NaOH)]: XII, 254, 281, 328 (4.17, 3.55, 3.75), 238, 308, 411 (4.21, 4.21, 3.72); IX, 229, 274, 281 (4.32, 3.52, 3.50), 249, 307 (4.18, 3.98); XVI, 229, 281, 318 (4.27, 4.21, 4.16), 240, 313, 404 (4.33, 4.33, 4.00); XVII, 228, 258, 281, 356 (4.42, 3.96, 3.52, 3.70), 236, 308, 440, (4.36, 4.36, 3.79); XVIII, 232 (shoulder), 289, 322 (4.12, 4.08, 3.92), 318, 404 (shoulder) (3.96, 3.46). Oxidn. of XI (R = R<sub>2</sub> = H, R<sub>1</sub> = OMe) with H<sub>2</sub>O<sub>2</sub> in alk. medium and crystn. of the products gave XIX (R = R<sub>2</sub> = H, R<sub>1</sub> = OMe) (XX), m. 276-7.degree. (C<sub>5</sub>H<sub>5</sub>N-MeOH) (with sublimation) [giving yellow-green halochromy with concd. H<sub>2</sub>SO<sub>4</sub> and yellow-rose color with Mg in alc. HCl, but no reaction with alc. FeCl<sub>3</sub>], demethylated (0.1 g.) by heating 2 hrs. at 240.degree. (oil bath) in 2 ml. AcCH and 5 ml. HI (d. 1.7), dilg. with H<sub>2</sub>O, and decolorizing the soln. withpowd. NaHSO<sub>3</sub> to give XIX (R = R<sub>2</sub> = H, R<sub>1</sub> = OH) (XXI), m. 350.degree. (C<sub>5</sub>H<sub>5</sub>N); Ac deriv. m. 273-5.degree. (C<sub>5</sub>H<sub>5</sub>N). XXI (0.5 g.) in 200 ml. Me<sub>2</sub>CO refluxed 90 hrs. with 2 ml. Me<sub>2</sub>SO<sub>4</sub> and 3.5 g. K<sub>2</sub>CO<sub>3</sub>, the filtered soln. evapd., the brown residue triturated with dil. NH<sub>4</sub>OH, the product washed with H<sub>2</sub>O by decantation and taken up in C<sub>6</sub>H<sub>6</sub>, the dried (CaCl<sub>2</sub>) soln. dild. with petr. ether, and the product recrystd. gave XXII (R = R<sub>2</sub> = H, R<sub>1</sub> = OMe) (XXIII), m. 133-4.degree., giving a yellow color with Mg in alc. HCl, but no reaction with alc. FeCl<sub>3</sub>. Arresting the methylation after 18 hrs. ebullition gave mainly XX. XXIII hydrolyzed with alc. KOH gave 3,7-dimethoxy-2'-carboxyflavone, m. 155-6.degree. (dil. alc.), remethylated with CH<sub>2</sub>N<sub>2</sub> in Et<sub>2</sub>O to give XXIII, m. 132-3.degree.. Oxidn. of XVII gave XIX (R = R<sub>1</sub> = H, R<sub>2</sub> = OMe) (XXIV), m. 252-3.degree. (C<sub>5</sub>H<sub>5</sub>N), heated at 240.degree. with 2 ml. AcOH and 5 ml. HI (d. 1.7) and the product crystd. from C<sub>5</sub>H<sub>5</sub>-MeOH to give XIX (R = R<sub>1</sub> = H, R<sub>2</sub> = OH), 352-5.degree.; Ac deriv. m. 319-21.degree. (C<sub>5</sub>H<sub>5</sub>N). Prolonged boiling

with Me<sub>2</sub>SO<sub>4</sub> and K<sub>2</sub>CO<sub>3</sub> in dry Me<sub>2</sub>CO and crystn. of the product from C<sub>6</sub>H<sub>6</sub>petr. ether yielded XXII (R = R<sub>1</sub> = H, R<sub>2</sub> = OMe), m. 87-8.degree., sapond. as above to give 3,6-dimethoxy-2'-carboxyflavone, m. 136-7.degree. (dil. alc.). Analogously, oxidn. of XVIII gave XIX (R<sub>2</sub> = H, R = R<sub>1</sub> = OMe), m. 275-6.degree. (C<sub>5</sub>H<sub>5</sub>N), demethylated to XXI (R<sub>2</sub> = H, R = R<sub>1</sub> = OH), m. <360.degree.; Ac deriv. m. 290-4.degree. (decompn.) (C<sub>5</sub>H<sub>5</sub>-MeOH).

IT Spectra, infrared  
Spectra, visible and ultraviolet  
(of chalcones)

IT Spectra, infrared  
Spectra, visible and ultraviolet  
(of pyranones)

IT 4940-39-0, 4H-1-Benzopyrancarboxylic acid, 4-oxo- 5651-58-1, Benzoic acid, o-(3-hydroxy-4-oxo-4H-1-benzopyran-2-yl)-, .delta.-lactone (derivs.)

IT 87-41-2, Phthalide  
(phenacyl derivs.)

IT 5651-58-1, Benzoic acid, o-(3-hydroxy-4-oxo-4H-1-benzopyran-2-yl)-, .delta.-lactone 7245-02-5, Flavone, 3-methoxy- 13203-89-9, Phthalide, 3-phenacyl- 16821-00-4, Phthalide, 3-(o-hydroxyphenacyl)- 16821-01-5, Phthalide, 3-(o-hydroxyphenacyl)-, acetate 16821-03-7, Phthalide, 3-(2-hydroxy-4-methoxyphenacyl)- 16855-05-3, Benzoic acid, o-(3,7-dimethoxy-4-oxo-4H-1-benzopyran-2-yl)-, methyl ester 16883-92-4, Benzoic acid, o-(3-hydroxy-7-methoxy-4-oxo-4H-1-benzopyran-2-yl)-, .delta.-lactone 29417-54-7, Benzoic acid, o-(3,7-dimethoxy-4-oxo-4H-1-benzopyran-2-yl)- 92796-17-3, 4H-1-Benzopyran-6-carboxylic acid, 3-hydroxy-2-(o-hydroxyphenyl)-4-oxo- 92965-22-5, Benzoic acid, 4-hydroxy-3-(o-hydroxycinnamoyl)- 93322-49-7, Phthalide, 3-(2-hydroxy-5-methoxyphenacyl)- 93322-54-4, Benzoic acid, 4-hydroxy-3-(4-hydroxy-3-methoxycinnamoyl)- 93328-30-4, 4H-1-Benzopyran-6-carboxylic acid, 3-hydroxy-2-(4-hydroxy-3-methoxyphenyl)-4-oxo- 93655-94-8, 4H-1-Benzopyran-6-carboxylic acid, 3-hydroxy-2-[o-(methoxymethoxy)phenyl]-4-oxo- 93655-99-3, 4H-1-Benzopyran-6-carboxylic acid, 3-hydroxy-2-(4-hydroxy-3,5-dimethoxyphenyl)-4-oxo- 93876-60-9, Phthalide, 3-(2-hydroxy-3,4-dimethoxyphenacyl)- 94306-31-7, 4H-1-Benzopyran-6-carboxylic acid, 3-hydroxy-2-[3-methoxy-4-(methoxymethoxy)phenyl]-4-oxo- 94683-85-9, Benzoic acid, 3-[3,5-dimethoxy-4-(methoxymethoxy)cinnamoyl]-4-hydroxy- 95020-31-8, Benzoic acid, 4-hydroxy-3-[o-(methoxymethoxy)cinnamoyl]- 95020-35-2, Benzoic acid, 4-hydroxy-3-(4-hydroxy-3,5-dimethoxycinnamoyl)- 95937-59-0, Benzoic acid, 4-hydroxy-3-[3-methoxy-4-(methoxymethoxy)cinnamoyl]- 97620-85-4, Benzoic acid, o-(3,7-dihydroxy-4-oxo-4H-1-benzopyran-2-yl)-, .delta.-lactone 97620-86-5, Benzoic acid, o-(3,7,8-trihydroxy-4-oxo-4H-1-benzopyran-2-yl)-, .delta.-lactone 97638-04-5, Benzoic acid, o-(3,6-dihydroxy-4-oxo-4H-1-benzopyran-2-yl)-, .delta.-lactone 97980-67-1, Benzoic acid, o-(3-methoxy-4-oxo-4H-1-benzopyran-2-yl)- 98251-24-2, Benzoic acid, o-(3-hydroxy-7,8-dimethoxy-4-oxo-4H-1-benzopyran-2-yl)-, .delta.-lactone 98281-77-7, Benzoic acid, o-(3,6-dimethoxy-4-oxo-4H-1-benzopyran-2-yl)- 98638-77-8, Benzoic acid, o-(3-hydroxy-6-methoxy-4-oxo-4H-1-benzopyran-2-yl)-, .delta.-lactone 98763-10-1, Benzoic acid, o-(3,7-dihydroxy-4-oxo-4H-1-benzopyran-2-yl)-, .delta.-lactone, acetate 98780-46-2, Benzoic acid, o-(3,6-dihydroxy-4-oxo-4H-1-benzopyran-2-yl)-, .delta.-lactone, acetate 98783-10-9, Benzoic acid, o-(3,6-dimethoxy-4-oxo-4H-1-benzopyran-2-yl)-, methyl ester 99689-87-9, Benzoic acid, o-(3,7,8-trihydroxy-4-oxo-4H-1-benzopyran-2-yl)-, .delta.-lactone, diacetate 856305-62-9, Benzoic acid, (m-[[.alpha.-(p-methoxyphenacyl)benzyl]amino]-, methyl ester (prepn. of)

L7 ANSWER 77 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1962:66698 CAPLUS  
DN 56:66698  
OREF 56:12789i,12790a-d  
ED Entered STN: 22 Apr 2001  
TI Synthesis of 1,4-diacylbenzenes by thermal decomposition of .alpha.-(4-acylphenoxy)propiophenones  
AU Royer, Rene; Bisagni, Emile; Hudry, Claude  
CS Inst. Radium, Paris  
SO Journal of Organic Chemistry (1961), 26, 4308-11  
CODEN: JOCEAH; ISSN: 0022-3263  
DT Journal  
LA Unavailable

CC 29 (Noncondensed Aromatic Compounds)  
AB cf. CA 55, 8343d. Pyrolysis of 2,5,4-RR2(R1CO)C6H2OCHMeCOC6H4R3-p (I)  
(R-R3 = hydrocarbon or H) at 310-470.degree. 10-30 min. gave up to 30%  
2,5,4-RR2(R1CO)C6H2COME (II) besides 2,5,4-RR2(R1CO)C6H2OH (III),  
p-R3C6H4COEt (IV), p-R3C6H4CHO (V), and p-R3C6H4CO2H (VI). The following  
I were prep'd. in about 80% yield by condensing the appropriate III with  
PhCOCHClMe and p-MeOC6H4COCHClMe, resp., according to Davies and Middleton  
(CA 52, 10048g) (R, R1 R2, R3, b.p./ mm., and m.p. given): H, Me, H, H  
(VII), -, 76.5.degree.; H, Et, H, H (VIII), 248-53.degree./17, 64.degree.;  
H, Ph, H, H (IX), -, 95.degree.; iso-Pr, Me, Me, H (X), 243-8.degree./15,  
64.degree.; H, Et, H, MeO (XI), 275-80.degree./15, 96.degree..  
Pyrodecompn. of VII-XI and prepn. of the resp. II dioxime supplied the  
following \*\*\*data\*\*\* (substrate, % yield of the resp. II, III, IV, V,  
and VI, and m.p. of II dioxime given): VII, 30, 41, 15, 5, traces,  
253-4.degree. (by projection); VIII, 27-8.degree., 23.5-6.0, 13.5-14.5,  
1.5, -, 193-4.degree. (by projection); IX, 12.5-13, 26.5-7.5, 23.5-5.0,  
6-7, 1.5, 194.5.degree.; X, 7, 48.5-50.0, 24-5.5, traces, -, -; XI,  
22-9.5, 25.5-31.5, 8-19, 7-14, 3.5-9.0, 193-4.degree.. II (R1 = R2 = Me,  
R = iso-Pr) was a new comp'd., m. 58.degree.. Pyrodecompn. of X gave as a  
by-product 2,4-dimethyl-3-phenyl-5-acetyl-7-isopropylbenzofuran, m.  
134.degree.. Reactions made to confirm the constitution of II included  
treating II (R = R2 = H, R1 = Ph) with SO2Cl2 in CHCl3 to yield 91.5%  
4-benzoyl-1-(chloroacetyl)benzene (XII), m. 80.degree., which by  
condensation with o-HOC6H4CHO in an alk. medium gave 84%  
2-(4-benzoylbenzoyl)benzofuran, m. 162.degree.. XII heated with pyridine  
gave 4-benzoyl-1-(pyridinium acetyl)benzene chloride, m. 255.degree. (by  
projection).

IT \*\*\*Fries\*\*\* \*\*\*rearrangement\*\*\*  
(of o-(alkylcarbonyl)phenyl benzoate derivs.)  
IT Ketones  
(p-diacylbenzene prepn. from di-)  
IT 93-55-0, Propiophenone  
(2-(p-acylphenoxy) derivs., thermal decompn. of)  
IT 6798-66-9, Propionitrile, 3-(phenylphosphino)-  
(compn. of)  
IT 71-43-2, Benzene  
(derivatives, p-diacyl-, prepn. of)  
IT 611-95-0, Benzoic acid, p-benzoyl-  
(formation from 4-(chloroacetyl)benzophenone)  
IT 100-09-4, p-Anisic acid 1996-77-6, p-Anisaldehyde, (2-fluoro-4,6-  
dinitrophenyl)hydrazone  
(formation of, from 4'-methoxy-2-(p-propionylphenoxy)propiophenone)  
IT 100-52-7, Benzaldehyde  
(formation of, from .alpha.-(4-acylphenoxy) propiophenones)  
IT 70-70-2, Propiophenone, 4'-hydroxy- 93-55-0, Propiophenone 99-93-4,  
Acetophenone, 4'-hydroxy- 121-97-1, Propiophenone, 4'-methoxy-  
579-75-9, o-Anisic acid 620-85-9, Methane, (p-ethylphenyl)phenyl-  
1009-61-6, Benzene, p-diacetyl- 1137-42-4, Benzophenone, 4-hydroxy-  
20024-90-2, Benzene, 1-ethyl-4-propyl- 37847-35-1, Acetophenone,  
4'-hydroxy-5'-isopropyl-2'-methyl- 40475-69-2, Propiophenone, 4'-acetyl-  
53689-84-2, Benzophenone, 4-acetyl- 91181-16-7, Propiophenone,  
4'-acetyl-, dioxime 92863-61-1, p-Cymene, 2,5-diacetyl- 93732-96-8,  
Benzophenone, 4-acetyl-, dioxime 93986-36-8, Benzophenone,  
4-(chloroacetyl)- 95222-88-1, Benzophenone, 4-(2-benzofuranylcabonyl)-  
95280-43-6, Benzophenone, 3-acetyl-2,2'-dihydroxy-5,5'-dimethyl-  
96273-00-6, Benzophenone, 3-acetyl-2,2'-dihydroxy-5,5'-dimethyl-,  
bis[(2,4-dinitrophenyl)hydrazone] 96868-95-0, Benzophenone,  
3-acetyl-2,2',5-trihydroxy-, bis[(2,4-dinitrophenyl)hydrazone]  
97656-20-7, Ketone, 7-isopropyl-2,4-dimethyl-3-phenyl-5-benzofuranyl  
methyl 99672-91-0, Pyridinium, 1-(p-benzoylphenacyl)-, chloride  
(prepn. of)  
IT 100802-79-7, Benzophenone, 4-[(.alpha.-methylphenacyl)oxyl-  
(thermal decomp. of)  
IT 95125-17-0, Propiophenone, 2,4'''-oxydi- 95280-23-2, Propiophenone,  
2-(p-acetylphenoxy)- 97080-54-1, Propiophenone, 4'-methoxy-2,4'''-oxydi-  
100625-22-7, Propiophenone, 2-[(6-acetylthymyl)oxyl]-  
(thermal decompn. of)

ED Entered STN: 22 Apr 2001  
 TI The preparation and pharmacology of some phenolic carbamates and  
 allophanates  
 AU Barnes, J. H.; Chapman, M. V. A.; McCrea, P. A.; Marshall, P. G.; Walsh,  
 P. A.  
 SO Journal of Pharmacy and Pharmacology (1961), 13, 39-48  
 CODEN: JPPMAB; ISSN: 0022-3573  
 DT Journal  
 LA Unavailable  
 CC 10E (Organic Chemistry: Benzene Derivatives)  
 AB The following new compds. were prepd. by known methods: 3,5-dimethylphenyl  
 butyrate, b14 127.degree.; 2-butyryl-3,5-dimethylphenol (by \*\*\*Fries\*\*\*  
 \*\*\*rearrangement\*\*\*), m. 55-58.5.degree. (petr. ether);  
 2-butyryl-3,5-dimethylphenol, m. 64.5-66.degree. (petr. ether);  
 2-propyl-3,5-dimethylphenol, m. 53.5-54.degree. (hexane);  
 4-propyl-2,5-dimethylphenol, b18 132.degree.. Addn. of 220 ml. 20% NaOH  
 to 1 g. mole of the phenol and 100 g. COCl<sub>2</sub> in 500 ml. CCl<sub>4</sub> at -5.degree.  
 with vigorous stirring for 45 min. gave the following substituted Ph  
 chloroformates (substituents given): 3,5-Me<sub>2</sub>, b12 96-7.degree.; 3,5-EtMe,  
 b11 107-8.degree.; 3,4-Me<sub>2</sub>, b13 101.degree.; 2,5-Me<sub>2</sub>, b11 89-90.degree.;  
 2,6-Me<sub>2</sub>, b11 83-3.5.degree.; 2,3-Me<sub>2</sub>, b12 94.degree.; 2,3,5-Me<sub>3</sub>, b12  
 108.degree.; o-Ph, b0.05 86-90.degree., m. 59-62.5.degree. (petr. ether);  
 p-Ph, b0.4 132-7.degree., m. 35-40.degree. (petr. ether). Substituted Ph  
 allophanates were prepd. by methods of Blohm and Beeker (CA 46, 6088c)  
 [substituents, m.p. (all with decompn.), crystn. solvent given]: 3-Et,  
 155-8.degree., MeOH; 2,5-Me<sub>2</sub>, 183-4.degree., EtOAc; 3,5-Me<sub>2</sub>, 199.degree.,  
 EtOH; 3,4-Me<sub>2</sub>, 167.degree., EtOH; 2,3-Me<sub>2</sub>, 200.degree., EtOAc; 3,5-EtMe,  
 168.degree., EtOH. Substituted Ph carbamates were prepd. (method A) from  
 the crude chloroformate in CCl<sub>4</sub> with 2 moles of NH<sub>3</sub> or the amine, or  
 (method B) by dissoln. of 0.2 mole of phenol in 100 ml. dry CCl<sub>4</sub>, addn. of  
 13 g. dry powd. NaCNO, then addn. of 33 g. Cl<sub>3</sub>CCO<sub>2</sub>H in 80 ml. CCl<sub>4</sub> to  
 the mixt. with continued stirring at 55.degree. for 6 hrs.; then H<sub>2</sub>O was  
 added to the cooled mixt., the org. layer sepd. and washed with N NaOH and  
 H<sub>2</sub>O, dried (Na<sub>2</sub>SO<sub>4</sub>), the CCl<sub>4</sub> evapd. and the residue crystd.  
 (substituents, method of prepn., m.p., and solvent of crystn. given):  
 3-Me, A, 139.degree., EtOAc; 3-Pr, A, 108-9.degree., cyclohexane; 3-Et, B,  
 103-4.degree., 50% MeOH; 3-Bu, B, 110-12.degree., cyclohexane;  
 3-pentadecyl, B, 97.degree., C<sub>6</sub>H<sub>6</sub>; 2-Pr, B, 194-6.degree., cyclohexane;  
 2-alkyl, B, 117-18.degree., cyclohexane; 2,3-Me<sub>2</sub>, A, 138-41.degree., C<sub>6</sub>H<sub>6</sub>;  
 2,5-Me<sub>2</sub>, B, 109-10.degree., cyclohexane; 2,6-Me, A, 177.degree.  
 (decompn.), EtOH; 2,5-EtMe, B, 106-7.degree., cyclohexane; 2,5-PrMe, B,  
 105-6.degree., cyclohexane; 2,5-BuMe, B, 87-7.5.degree., cyclohexane;  
 3,4-MeEt, B, 99-100.degree., cyclohexane; 3,5-MeEt, B, 100-1.degree.,  
 C<sub>6</sub>H<sub>6</sub>; 3,4-MePr, B, 117-18.degree., cyclohexane; 2,3,4-Me<sub>3</sub>, B,  
 162-4.degree., C<sub>6</sub>H<sub>6</sub>; 2,3,5-Me<sub>3</sub>, A, 137-9.degree., C<sub>6</sub>H<sub>6</sub>-petr. ether;  
 3,4,5-Me<sub>3</sub>, A, 163-6.degree., EtOH; 4,2,5-EtMe<sub>2</sub>, B, 138-40.degree., C<sub>6</sub>H<sub>6</sub>;  
 4,2,5-PrMe, B, 132-3.5.degree., cyclohexane; 6,2,3-EtMe<sub>2</sub>, B,  
 132.5-4.5.degree., CCl<sub>4</sub>; 2,3,5-EtMe<sub>2</sub>, A, 110.5-12.degree., cyclohexane;  
 2,4,5-EtMe<sub>2</sub>, A, 142.5-3.5.degree., EtOH; 2,3,5-PrMe<sub>2</sub>, A, 128-8.5.degree.,  
 cyclohexane; 2,3,4,5-Me<sub>4</sub>, B, 177-8.5.degree., toluene; 2,3,5,6-Me<sub>4</sub>, B,  
 191-2.degree., toluene; 6,2,3,5-EtMe<sub>3</sub>, B, 150.5-52.degree., C<sub>6</sub>H<sub>6</sub>; 3-MeO,  
 B, 136-8.degree., EtOAc; 4-MeO, B, 127-9.degree., EtOAc; 4-tert-Bu, B,  
 118-19.degree., cyclohexane; 2-Ph, A, 143.degree., EtOH; 3-Ph, B,  
 157-8.degree., C<sub>6</sub>H<sub>6</sub>; 4-Ph, A, 170.degree., EtOH; 3-Cl, B, 135-7.degree.,  
 C<sub>6</sub>H<sub>6</sub>; 4-Cl, B, 142.degree., EtOAc; 2,4-MeCl, B, 153.degree., EtOAc;  
 3,4-MeCl, B, 150-2.degree., EtOAc; 4,2-MeCl, B, 155.degree., C<sub>6</sub>H<sub>6</sub>;  
 2,4-Cl<sub>2</sub>, B, 129.degree., C<sub>6</sub>H<sub>6</sub>; 2,4,5-Cl<sub>3</sub>, B, 131-2.degree., C<sub>6</sub>H<sub>6</sub>; N,3-Me<sub>2</sub>,  
 A, 74-5.degree., petr. ether; 3-methyl-(N-ethyl), A, -, -, (b0.2  
 114.degree.); 3-methyl-(N-butyl), A, 52-3.degree., petr. ether;  
 3-methyl-(N-m-tolyl), A, 71-2.degree., petr. ether; N,N,3-Me<sub>3</sub>, A, b16  
 147.degree.; N,2,3-Me<sub>3</sub>, A, 110-12.degree., cyclohexane;  
 2,3,5-trimethyl(N-hydroxy), A, 173.5-4.5.degree., C<sub>6</sub>H<sub>6</sub>. Other carbamates  
 prepd. were: 4-(m-tolyloxycarbonyl)morpholine, A, 82-3.degree.,  
 cyclohexane; 1-(m-tolyloxycarbonyl)piperidine, A, 63-3.5.degree., petr.  
 ether; .beta.-naphthylcarbamate, B, 156-7.degree., C<sub>6</sub>H<sub>6</sub>;  
 5-hydroxy-1,2,3,4-tetrahydronaphthalene carbamate, B, 138-40.degree.,  
 cyclohexane; 4-hydroxyindancarbamate, B, 139.5-40.5.degree.,  
 C<sub>6</sub>H<sub>6</sub>-cyclohexane; 5-hydroxyindancarbamate, A, 147-8.degree., cyclohexane.  
 The analgesic activity, potency, and toxicity \*\*\*data\*\*\* are tabulated  
 for a series of phenolic carbamates.  
 IT Pharmacology  
 (of allophanates and carbamates)

IT Methane, triphenylthiocyanato-  
 Phenol, 2,3,4-trimethyl-, carbamates  
 Phenol, m-propyl-, carbamates  
 Phenol, o-propyl-, carbamates  
 m-Cresol, 5-propyl-, carbamates  
 m-Cresol, 6-ethyl-, carbamates

IT 90-43-7, Phenol, o-phenyl- 92-69-3, Phenol, p-phenyl- 95-65-8,  
 3,4-Xylenol 95-87-4, 2,5-Xylenol 108-39-4, m-Cresol 108-68-9,  
 3,5-Xylenol 463-73-0, Formic acid, chloro- 526-75-0, 2,3-Xylenol  
 576-26-1, 2,6-Xylenol 620-17-7, Phenol, m-ethyl-, " 697-82-5, Phenol,  
 2,3,5-trimethyl- 698-71-5, m-Cresol, 5-ethyl- 6414-57-9, Carbamic  
 acid, methyl-  
 (esters)

IT 463-77-4, Carbamic acid 625-78-5, Allophanic acid  
 (esters, pharmacology of)

IT 89-69-0, Benzene, 1,2,4-trichloro-5-nitro- 1639-85-6, Butyrophenone,  
 2'-hydroxy-4',6'-dimethyl- 1726-94-9, Methane, isothiocyanatotriphenyl-  
 5724-99-2, Phenol, p-chloro-, carbamate 5944-84-3, m-Cresol, 4-chloro-,  
 carbamate 5944-94-5, o-Cresol, 4-chloro-, carbamate 5944-95-6,  
 p-Cresol, 2-chloro-, carbamate 7305-07-9, Carbamic acid, dimethyl-,  
 m-tolyl ester 19654-61-6, Phenol, m-chloro-, carbamate 37547-27-6,  
 Phenol, m-methoxy-, carbamates 38411-76-6, Carbamic acid, ethyl-,  
 m-tolyl ester 52030-36-1, Phenol, p-tert-butyl-, carbamate 60309-27-5,  
 Carbamic acid, butyl-, m-tolyl ester 63082-07-5, Phenol, p-methoxy-,  
 carbamates 69051-69-0, Butyric acid, 3,5-xylyl ester 69051-70-3,  
 3,5-Xylenol, 2-butyl- 89692-80-8, Phenol, 2,4-dichloro-, carbamate  
 98555-76-1, Phenol, 2,4,5-trichloro-, carbamate 99060-08-9, Phenol,  
 o-allyl-, carbamate 99075-90-8, Carbamic acid, hydroxy-,  
 2,3,5-trimethylphenyl ester 99855-55-7, 1,6-Naphthalenediol,  
 5,6,7,8-tetrahydro-, 6-carbamate 99972-35-7, 2-Naphthol, carbamate  
 100369-61-7, Phenol, 2-ethyl-3,5,6-trimethyl-, carbamate 103203-49-2,  
 2,5-Indandiol, 2-carbamate 103205-36-3, 2,4-Indandiol, 2-carbamate  
 103565-39-5, Phenol, m-butyl-, carbamate 103854-31-5, 3,5-Xylenol,  
 2-ethyl-, carbamate 103854-32-6, 3,4-Xylenol, 6-ethyl-, carbamate  
 103854-33-7, m-Cresol, 6-propyl-, carbamates 103854-34-8, Phenol,  
 2,3,5,6-tetramethyl-, carbamates 103855-85-2, 2,3-Xylenol, 6-ethyl-,  
 carbamate 103855-87-4, Phenol, 2,3,4,5-tetramethyl-, carbamates  
 104174-39-2, 3,5-Xylenol, 2-propyl- 104174-71-2, 2,5-Xylenol, 4-propyl-  
 105788-18-9, m-Cresol, 6-butyl-, carbamate 105900-60-5,  
 4-Morpholinecarboxylic acid, m-tolyl ester 106275-04-1,  
 1-Piperidinecarboxylic acid, m-tolyl ester 108716-19-4, Carbanilic acid,  
 m-methyl-, m-tolyl ester 110030-66-5, Phenol, m-phenyl-, carbamate  
 112949-70-9, Phenol, m-pentadecyl-, carbamate 114597-89-6, Phenol,  
 3,4,5-trimethyl-, carbamates 114597-90-9, m-Cresol, 4-ethyl-, carbamates  
 114597-91-0, m-Cresol, 5-ethyl-, carbamates 857431-82-4, 2,5-Xylenol,  
 4-propyl-, carbamate 875821-21-9, 2,5-Xylenol, 4-ethyl-, carbamate  
 875821-35-5, 3,5-Xylenol, 2-propyl-, carbamate  
 (prepn. of)

L7 ANSWER 79 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1957:23898 CAPLUS

DN 51:23898

OREF 51:4741e-g

ED Entered STN: 22 Apr 2001

TI Nuclear-acylated derivatives of 1,2,4-trihydroxybenzene and their use as  
 antioxidants for fats and oils

IN Bell, Alan; Knowles, M. B.; Tholstrup, Clarence E.

PA Eastman Kodak Co.

DT Patent

LA Unavailable

CC 27 (Fats, Fatty Oils, Waxes, and Detergents)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2759828		19560821	US 1952-302412	19520802

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2759828	IPCR	C11B0005-00 [I,A]; C11B0005-00 [I,C]
	NCL	426/545.000; 106/263.000; 106/270.000; 252/404.000; 426/546.000; 554/007.000

GI For diagram(s), see printed CA Issue.

AB Trihydroxyphenyl ketones (I), general formula 2,4,5-(HO)3C6H2COR, were found to be more effective antioxidants for fats and oils than tert-butylhydroxyanisole or Pr gallate. I were prepd. having R and m.ps. as follows: Me 206-7.degree.; Pr (II) 151-3.degree.; CHMe2, light-yellow, 136-8.degree.; Ph 220-3.degree.; C7H15 113-14.degree.; C17H35, light-yellow, 118-19.degree.; CH:CHMe, light-brown, 219-21.degree.; and C:CHCH:CH.O, bright-orange, 209-11.degree.. Nuclear acylations of 1,2,4-(HO)3C6H3 by Friedel-Crafts-type catalysts or \*\*\*Fries\*\*\* rearrangements of phenolic esters were generally employed, p-Benzoquinone (0.5 mole), 1.4 moles (PrCO)2O, and 10 cc. concd. H2SO2 gave 90% 1,2,4-(PrCO2)3C6H3 b0.08 153-5.degree.. This compd. was rearranged to II by AlCl3 in PhNO3. \*\*\*Data\*\*\* are presented on the use of these antioxidants in the stabilization of lard, corn oil, cottonseed oil, and peanut oil. Cf. C.A. 50, 10432e.

IT Antioxidants  
 (2,4,5-trihydroxyphenyl ketones)

IT Ketones  
 (2,4,5-trihydroxyphenyl, as antioxidants in fats and oils)

IT Lard  
 Oils  
 (antioxidants for, 2,4,5-trihydroxyphenyl ketones)

IT Peanut oil or Groundnut oil  
 (antioxidants for, 2,4,5-trihydroxyphenyl ketones as)

IT Fats  
 (antioxidants in, 2,4,5-trihydroxyphenyl ketones as)

IT Corn oil  
 Cottonseed oil  
 (oxidn. of, inhibition by 2,4,5-trihydroxyphenyl ketones)

IT 35094-87-2, Benzaldehyde, 2,4,5-trihydroxy- 57863-94-2,  
 Octadecanophenone, 2',4',5'-trihydroxy- 111443-88-0, Butyric acid,  
 as-phenenyl ester  
 (as antioxidant in fats and oils)

IT 14894-91-8, Benzophenone, 2,4,5-trihydroxy-  
 (manuf. for antioxidant in fats and oils)

IT 533-73-3, 1,2,4-Benzenetriol  
 (nuclear-acylated derivs., as antioxidants in fats and oils, and tributyrates)

IT 1421-63-2, Butyrophenone, 2',4',5'-trihydroxy- 1818-27-5, Acetophenone,  
 2',4',5'-trihydroxy- 99059-11-7, Crotonophenone, 2',4',5'-trihydroxy-  
 99186-85-3, Propiophenone, 2',4',5'-trihydroxy-2-methyl- 99851-69-1,  
 Ketone, 2-furyl 2,4,5-trihydroxyphenyl 107821-60-3, Octanophenone,  
 2',4',5'-trihydroxy-  
 (prepn. and use as antioxidant in fats and oils)

L7 ANSWER 80 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1955:4643 CAPLUS  
 DN 49:4643  
 OREF 49:933f-h  
 ED Entered STN: 22 Apr 2001  
 TI The Fries reaction  
 AU Marey, Abdel Fattah; Baddar, Fawzy G.; Awad, Wm. I.  
 CS Cairo Univ., Egypt  
 SO Nature (London, United Kingdom) (1953), 172, 1186-7  
 CODEN: NATUAS; ISSN: 0028-0836  
 DT Journal  
 LA Unavailable  
 CC 10 (Organic Chemistry)  
 AB cf. C.A. 45, 7054b. The effect of the reaction medium on the AlCl3 (I) catalyzed rearrangement of phenyl- (II) and p-tolyl hydrogen succinate (III) under standardized conditions is reported. The reaction of II in (CHCl2)2 or PhNO2 gave a mixt. of o- (IV) and p-HOC6H4CO(CH2)2CO2H (V); the ratio of V to IV increased with the dipole moment of the solvent. PhMe, m-C6H4Me2, PhOMe, Ph2O, and PhCl, used as solvents, combine with the ion, HO2C(CH2)2CO+ (VI) to give nonphenolic .beta.-aroyl propionic acids (VII). Yields of VII increase with increasing nucleophilic character of the solvent. The \*\*\*data\*\*\* support the assumption that the reaction involves attack of VI on the phenoxide-AlCl3 complex and the solvent molecules, resp. The o/p ratio in the \*\*\*Fries\*\*\* rearrangement using I depends on the nature of the ester, ease of formation of the oxo-carbonium ion, on the dielectric constant of the solvent, and reaction temp.

IT Solvents

( \*\*\*Fries\*\*\*        \*\*\*rearrangement\*\*\*        and)  
 IT        \*\*\*Rearrangements\*\*\*  
 (        \*\*\*Fries\*\*\*        , effect of solvents on nature of)  
 IT        79-34-5, Ethane, 1,1,2,2-tetrachloro-  
           (as solvent for Friedel-Crafts reaction with naphthalene, for  
           \*\*\*Fries\*\*\*        \*\*\*rearrangement\*\*\*        )  
 IT        108-38-3, m-Xylene  
           (as solvent for        \*\*\*Fries\*\*\*        \*\*\*rearrangement\*\*\*        )  
 IT        108-88-3, Toluene  
           (as solvent, for        \*\*\*Fries\*\*\*        \*\*\*rearrangement\*\*\*        )  
 IT        110-15-6, Succinic acid  
           (esters,        \*\*\*Fries\*\*\*        \*\*\*rearrangement\*\*\*        of aryl)  
 IT        98-95-3, Benzene, nitro-        100-66-3, Anisole        101-84-8, Phenyl ether  
           108-90-7, Benzene, chloro-  
           (in        \*\*\*Fries\*\*\*        \*\*\*rearrangement\*\*\*        )  
 IT        3153-44-4, Propionic acid, 3-p-anisoyl-        3984-34-7, Propionic acid,  
           3-p-chlorobenzoyl-        4619-20-9, Propionic acid, 3-p-toluoyl-        15880-03-2,  
           Propionic acid, 3-(2,4-dimethylbenzoyl)-        36330-86-6, Propionic acid,  
           3-p-phenoxybenzoyl-        39560-34-4, Propionic acid, 3-salicyloyl-  
           56872-39-0, Propionic acid, 3-p-hydroxybenzoyl-        103987-17-3, Propionic  
           acid, 3-(2,5-cresotoyl)-  
           (prepn. of)

L7        ANSWER 81 OF 83        CAPLUS        COPYRIGHT 2006 ACS on STN

AN        1954:42354        CAPLUS

DN        48:42354

OREF        48:7576i,7577a-b

ED        Entered STN:        22 Apr 2001

TI        Search for new insecticides

AU        Sen, V. A. B.; Parmar, S. S.

CS        Lucknow Univ.

SO        J. Indian Chem. Soc. (1953), 30, 59-60

DT        Journal

LA        Unavailable

CC        10 (Organic Chemistry)

AB        cf. C.A. 44, 3197e. Twelve .omicron.-ClC6H4CH2 and allyl ethers of  
           2-acyl-4-bromophenols were prepd. for possible use as contact  
           insecticides. The intermediate .omicron.-HO ketones were prepd. by the  
           \*\*\*Fries\*\*\*        \*\*\*rearrangement\*\*\*        of the esters of p-BrC6H4OH. The  
           ethers were synthesized by refluxing 0.1 mole .omicron.-HO ketone, 0.1  
           mole .omicron.-ClC6H4CH2Cl or CH2:CHCH2Br, freshly fused K2CO3, and 100  
           cc. Me2CO for 8 hrs. The following .omicron.-ClC6H4CH2 ethers of  
           2-acyl-4-bromophenols were obtained (acyl, % yield, b.p./mm., and m.p. of  
           2,4-dinitrophenylhydrazone given): Ac, 54.5, 119.degree./6, 252.degree.;  
           EtCO, 77.7, 107.degree./5, 173.degree.; PrCO,  
           79.3,152.degree./6,184.degree.; BuCO, 80.8, 157.degree./6, 198.degree.;  
           AmCO, 71.3, 209.degree./6, 163.degree.; C6H13CO, 83.5, 138.degree./5,  
           129.degree.. The        \*\*\*data\*\*\*        for the corresponding allyl ethers follow  
           (acyl, % yield, m.p. (or b.p.), and m.p. of 2,4-dinitrophenylhydrazone):  
           Ac, 62.4, 58.degree., 147.degree.; EtCO, 59.6, 64.degree., 132.degree.;  
           PrCO, 58.4, 69.degree., 148.degree.; BuCO, 61.2, b6 210.degree.,  
           188.degree.; AmCO, 62.7, b6 230.degree., 146.degree.; C6H3CO, 79.0, b0  
           239.degree., 152.degree..

IT        Insecticides

(chlorinated)

IT        Butyrophenone, 5'-bromo-2'-(o-chlorobenzoyloxy)-

(as insecticide, and 2,4-dinitrophenylhydrazone)

IT        874008-04-5, Hexanophenone, 5'-bromo-2'-(o-chlorobenzoyloxy)-

874488-55-8, Propiophenone, 5'-bromo-2'-(o-chlorobenzoyloxy)-

875231-32-6, Propiophenone, 2'-(allyloxy)-5'-bromo-

(as insecticide, and 2,4-dinitrophenyl hydrazone)

IT        444809-89-6, Acetophenone, 2'-(allyloxy)-5'-bromo-        872307-36-3,

Heptanophenone, 5'-bromo-2'-(o-chlorobenzoyloxy)-        872307-37-4,

Heptanophenone, 2'-(allyloxy)-5'-bromo-        872310-18-4, Hexanophenone,

2'-(allyloxy)-5'-bromo-        873998-32-4, Butyrophenone, 2'-(allyloxy)-5'-

bromo-        874518-48-6, Valerophenone, 5'-bromo-2'-(o-chlorobenzoyloxy)-

874518-50-0, Valerophenone, 2'-(allyloxy)-5'-bromo-        875819-66-2,

Acetophenone, 5'-bromo-2'-(o-chlorobenzoyloxy)-

(as insecticide, and 2,4-dinitrophenylhydrazone)

L7        ANSWER 82 OF 83        CAPLUS        COPYRIGHT 2006 ACS on STN

AN        1954:32608        CAPLUS



DN 48:32608  
 OREF 48:5862i,5863a-d  
 ED Entered STN: 22 Apr 2001  
 TI The isomerization of phenolic esters of .alpha.-ethylenic acids  
 AU Colonge, J.; Chambard, R.  
 CS Fac. sci., Lyon  
 SO Bulletin de la Societe Chimique de France (1953) 573-84  
 CODEN: BSCFAS; ISSN: 0037-8968  
 DT Journal  
 LA Unavailable  
 CC 10 (Organic Chemistry)  
 OS CASREACT 48:32608  
 AB cf. C.A. 46, 7569e. All results reported loc. cit. are repeated. The esters prep'd., in addn. to those listed previously, are: m-tolyl crotonate (I), b24 152-8.degree., yield 67%; p-tolyl crotonate (II); Ph acrylate (III); CH2:CMcCO2Ph (IV); 2-naphthyl .gamma.,.gamma.-dimethyl-acrylate (V), b2.5 153-6.degree., m. 58.5.degree., yield 87%. With AlCl3, in CS2, as before, V cyclizes to 1-hydroxy-7,7-dimethyl-8,9-dihydro-9-phenalene, m. 62.5.degree.; benzoate, m. 102.degree.; dinitrophenylhydrazine, m. 216.5.degree.. 4,4-Dimethyl-3,4-dihydrocoumarin (VI) (5 g.) with MeMgI gives 5 g. 2,4-dimethyl-4-(.omicron.-hydroxyphenyl)-2-pentanol, m. 93.5.degree.. .omicron.-MeOC6H4CMe2CH2CO2Me (VII), prep'd. from VI, gives back 71% VI when treated with SOCl2, then AlCl3. New \*\*\*data\*\*\* for the Me .omicron.-methoxyhydrocinnamic acid derivs. includes: VII, d20.7 1.077, n20.7D 1.5187; Ph(o-MeOC6H4)CHCH2CONHNH2, m. 168.degree.; hydrazide analog of VII, m. 164.degree.. Ph[5,2-Me(MeO)C6H3]CMeCH2CO2H, m. 134.5.degree. (prep'd. from 6-methyl-4-phenyl-3,4-dihydrocoumarin). Other products, obtained in small amts. during purification of the dihydrocoumarins, are: From .omicron.-tolyl .gamma.,.gamma.-dimethylacrylate (b13 138-9.5): 2,2,8-trimethyl-4-chromanone(semicarbazone, m. 189.degree.); 3,3,6-trimethyl-5-hydroxy-1-indanone, m. 127.degree. (dinitrophenylhydrazine, m. 203.degree.). From m-tolyl .gamma.,.gamma.-dimethylacrylate (b3.5 115.degree.): 4,4,7-trimethylhydrocoumarin, m. 59.5.degree.; 2,2,7-trimethyl-4-chromanone, m. 70.degree. (semicarbazone, m. 227.5.degree.); 2,2,5-trimethyl-4-chromanone, m. 96.5.degree.; 5-hydroxy-3,3,7-trimethyl-1-indanone, m. 113.5.degree.. From p-tolyl .gamma.,.gamma.-dimethylacrylate (b3.5 111-11.5.degree.): 4,4,6-trimethylhydrocoumarin, m. 64.5; 5,2-Me(MeO)C6H3CMe2CH2CO2Me (free acid, m. 79.5). From Ph cinnamate, Ph(.omicron.-HOC6H4)CHCH2CO2H, m. 131.degree.. The following esters did not cyclize (where products were identified, they are listed): ClCH2CH2CO2Ph; Ph crotonate (gave 2-methyl-4-chromanone, 2-ethylcoumaranone, p-crotonylphenol, and p-MeOC6H4COMe); II (gave 2,6-dimethyl-4-chromanone); and Ph tiglate (gave p-tigloylphenol). 55 references.  
 IT \*\*\*Rearrangements\*\*\*  
 ( \*\*\*Fries\*\*\* , of .alpha.-ethylenic acid esters)  
 IT Ring closure or formation  
 (in isomerization of aryl esters of .alpha.-ethylenic acids)  
 IT Isomerization  
 (of phenolic esters of .alpha.-ethylenic acids)  
 IT Esters  
 (of phenols, with .alpha.-ethylenic acids, isomerization of)  
 IT 1-Indanone, 5-hydroxy-3,3,6-trimethyl-, dinitrophenylhydrazine  
 4-Chromanone, 2,2,7-trimethyl-, semicarbazones  
 4-Chromanone, 2,2,8-trimethyl-, semicarbazones  
 IT 875849-64-2, 1H-Benzonaphthen-1-one, 2,3-dihydro-9-hydroxy-3,3-dimethyl-  
 875849-64-2, 1H-Benzonaphthen-1-one, 2,3-dihydro-9-hydroxy-3,3-dimethyl-  
 (and derivs.)  
 IT 937-41-7, Acrylic acid, phenyl ester 2177-70-0, Methacrylic acid, phenyl  
 ester 56164-76-2, 2-Naphthol, senecioate  
 (and reactions of)  
 IT 119-84-6, Hydrocoumarin 33214-38-9, Hydrocinnamic acid,  
 o-methoxy-.beta.,.beta.-dimethyl-  
 (derivs.)  
 IT 541-47-9, Senecioic acid  
 (esters of, and reactions of)  
 IT 3724-65-0, Crotonic acid  
 (esters, and reactions of)  
 IT 100-06-1, Acetophenone, 4'-methoxy- 939-49-1, Crotonophenone,  
 4'-hydroxy- 5631-75-4, 4-Chromanone, 2-methyl- 24552-27-0, Propionic  
 acid, 3-chloro-, phenyl ester 29598-22-9, Hydrocoumarin, 4,4-dimethyl-

51423-95-1, 4-Chromanone, 2,6-dimethyl- 53614-65-6, 3(2H)-Benzofuranone, 2-ethyl- 61904-46-9, Melilotic acid, .beta.-phenyl- 73582-86-2, Hydrocinnamic acid, 2-methoxy-.beta.,.beta.,5-trimethyl- 73582-87-3, Hydrocinnamic acid, 2-methoxy-.beta.,.beta.,5-trimethyl-, methyl ester 80856-29-7, Tiglic acid, phenyl ester 92617-79-3, Hydrocoumarin, 4,4,6-trimethyl- 105640-09-3, Hydrocoumarin, 4,4,7-trimethyl- 106380-31-8, 2-Pentanol, 4-(o-hydroxyphenyl)-2,4-dimethyl- 109089-77-2, Hydrocinnamic acid, 2-methoxy-5-methyl-.beta.-phenyl- 110411-30-8, 4-Chromanone, 2,2,7-trimethyl- 142228-70-4, 4-Chromanone, 2,2,8-trimethyl- 143260-31-5, 4-Chromanone, 2,2,5-trimethyl- 478010-70-7, 1-Indanone, 5-hydroxy-3,3,6-trimethyl- 855378-87-9, Crotonophenone, 4'-hydroxy-2-methyl- 858217-26-2, Hydrocinnamic acid, o-methoxy-.beta.-phenyl-, hydrazide 860357-54-6, 1-Indanone, 5-hydroxy-3,3,7-trimethyl- (prepn. of)

L7 ANSWER 83 OF 83 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1950:49260 CAPLUS

DN 44:49260

OREF 44:9378e-i,9379a-d

ED Entered STN: 22 Apr 2001

TI Conversion products of phenol and salicylic acid esters and their tuberculosidal properties

AU Vogelsang, H. D.; Wagner-Jauregg, Th.

CS "Georg-Speyer Haus", Frankfurt a/Main, Germany

SO Ann. (1950), 568, 116-128

DT Journal

LA Unavailable

CC 10 (Organic Chemistry)

AB The following esters of 4,2-Cl(C<sub>7</sub>H<sub>15</sub>)C<sub>6</sub>H<sub>3</sub>OH were prepd. by the use of the appropriate acid chloride (under N): monophosphate (I), C<sub>13</sub>H<sub>20</sub>O<sub>4</sub>ClP, m. 61.degree. (from AcOEt); chaulmoograte (II), pale yellow oil, b<sub>0.2</sub> 272.degree.; and 3,5-diiodosalicylate (III), C<sub>20</sub>H<sub>21</sub>O<sub>3</sub>ClI<sub>2</sub>, m. 90.5.degree. (from glacial AcOH). [Although the bactericidal properties of hexyl compds. corresponding to I, II, and III were examd. and are described briefly, their prepn. is not given. A private communication from Vogelsang to the abstractor indicates that the heptyl derivs., I, II, and III, behave similarly but are slightly less powerful. The homolog of I caused marked necrosis when injected subcutaneously over a protracted period into guinea pigs. The homologs of II and III showed weak bactericidal properties because of their insoly.] 4,2-Cl(C<sub>6</sub>H<sub>13</sub>)C<sub>6</sub>H<sub>3</sub>OH (IV) (21.2 g.) and 14.8 g. C<sub>6</sub>H<sub>13</sub>COCl reacted vigorously at 80.degree., giving 18 g. IV heptanoate, b<sub>0.4</sub> 182-94.degree. (giving no FeCl<sub>3</sub> reaction), which when heated at 120.degree. with 12 g. AlCl<sub>3</sub> gave 8 g. of the 6-heptanoyl deriv. (V) of IV, C<sub>19</sub>H<sub>29</sub>O<sub>2</sub>Cl, oil, b<sub>0.2</sub> 198-205.degree., giving a FeCl<sub>3</sub> reaction. V in PhMe refluxed 12 hrs. with amalgamated Zn and HCl gave the 6-heptyl deriv. of IV, b<sub>0.8</sub> 188-98.degree.. p-ClC<sub>6</sub>H<sub>4</sub>OH (VI) and (CH<sub>2</sub>CH<sub>2</sub>COCl)<sub>2</sub> gave [p-ClC<sub>6</sub>H<sub>4</sub>OCO(CH<sub>2</sub>)<sub>2</sub>]<sub>2</sub> (VII), m. 110.5.degree. (from EtOH). The analogous sebacate (VIII) m. 83.degree. (from MeOH). VII heated at 115.degree. (and finally at 150.degree.) with Al<sub>2</sub>O<sub>3</sub> rearranged to give varying yields of (5,2-Cl(HO)C<sub>6</sub>H<sub>3</sub>COCH<sub>2</sub>CH<sub>2</sub>)<sub>2</sub> (IX), yellowish-green, m. 196.5.degree. (from PhMe), the mother liquors from which yielded 5,2-Cl(HO)C<sub>6</sub>H<sub>3</sub>CO(CH<sub>2</sub>)<sub>4</sub>CO<sub>2</sub>H (X), m. 136.degree. (from MeOH). With a VII:Al<sub>2</sub>O<sub>3</sub> ratio of 1:1, the yields of IX and X were 7.8 and 31.2%, resp.; when this ratio was 1:6 the resp. yields were 36.2% IX and 27.1% X. A similar rearrangement of VIII gave [5,2-Cl(HO)C<sub>6</sub>H<sub>3</sub>CO(CH<sub>2</sub>)<sub>4</sub>]<sub>2</sub> (XI). (The acid corresponding to X is not described.) Amalgamated Zn (40 g.) and 100 cc. HCl (d. 1.2) boiled 7 days with 10 g. IX in the min. amt. of PhMe, cooled, and extd. with Et<sub>2</sub>O yielded [5,2-Cl(HO)C<sub>6</sub>H<sub>3</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>]<sub>2</sub>, m. 151.5.degree. (from CHCl<sub>3</sub>); the decane analog (obtained by reducing XI), m. 78.degree. (from C<sub>6</sub>H<sub>6</sub>). Me salicylate at 80.degree. was treated gradually with (CH<sub>2</sub>CH<sub>2</sub>COCl)<sub>2</sub> and the temp. raised slowly to 140.degree.; the cooled mixt. with 2 N NaOH at 0.degree. gave [o-MeO<sub>2</sub>CC<sub>6</sub>H<sub>4</sub>OCO(CH<sub>2</sub>)<sub>2</sub>]<sub>2</sub> (XII), m. 107.degree. (from MeOH). When 11 g. XII in 100 cc. warm CS<sub>2</sub> was treated slowly with vigorous stirring with 20 g. AlCl<sub>3</sub> and then boiled, and the product, after evapn. (to remove CS<sub>2</sub>) and treatment with 2 N HCl at 0.degree., extd. with Et<sub>2</sub>O gave a residue which, heated at 3 mm. (to remove Me salicylate) and crystd. from H<sub>2</sub>O, gave .delta.-(3-carboxy-4-hydroxybenzoyl)valeric acid, m. 179.degree.. 2,3-Me(HO)C<sub>6</sub>H<sub>3</sub>CO<sub>2</sub>Me and C<sub>6</sub>H<sub>13</sub>COCl gave the corresponding heptanoate, b<sub>0.05</sub> 210.degree., which with AlCl<sub>3</sub> rearranged to Me 3-methyl-5-heptanoylsalicylate (XIII), C<sub>16</sub>H<sub>22</sub>O<sub>4</sub>, b<sub>0.2</sub> 204-10.degree., m. 51-2.degree. (corresponding free acid (XIV), m.

131.degree.). The reaction yielding XIII also gave a resinous product which, after thorough trituration with HCl to remove XIII, was heated with 2 N NaOH, boneblack, and acidified, thus also giving XIV which was reduced with Zn-Hg and HCl to 3-methyl-5-heptylsalicylic acid, m. 84.degree.. ClCH<sub>2</sub>COC<sub>2</sub>Cl and Me salicylate in CS<sub>2</sub> gave Me 5-(chloroacetyl)salicylate (XV), m. 85-102.degree. (from MeOH or petr. ether, but also yielding a less sol. fraction, m. 108-9.degree., which gave the same analytical \*\*\*data\*\*\* as did XV). (CH<sub>2</sub>CH<sub>2</sub>COC<sub>2</sub>Cl)<sub>2</sub> and PhNHAc gave .delta.-(p-acetamidobenzoyl)valeric acid, m. 196.degree., which with concd. HCl gave the free NH<sub>2</sub> analog, m. 179-80.degree.. SeO<sub>2</sub> oxidation of IV in aq. dioxane, followed by fractionation in vacuo, gave 5,2-Cl(HO)C<sub>6</sub>H<sub>3</sub>CO(CH<sub>2</sub>)<sub>4</sub>Me, m. 56.degree.. The tuberculocidal properties of various derivs. are discussed. Of the o-alkyl derivs. of 4-ClC<sub>6</sub>H<sub>4</sub>OH, the highest activity was shown by IV on a Sauton nutrient medium, which was active in a diln. 1-1.25 parts per million. Extremely high activities were also shown by p-hexylsalicylic acid and p-H<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>COAm.

IT \*\*\*Rearrangements\*\*\*  
( \*\*\*Fries\*\*\* )

IT Esters  
(as tuberculosis-inhibiting compds.)

IT 69-72-7, Salicylic acid 106-48-9, Phenol, p-chloro- 111-14-8,  
Heptanoic acid 124-04-9, Adipic acid 133-91-5, Salicylic acid,  
3,5-diiodo- 7664-38-2, Phosphoric acid 18979-94-7, Phenol,  
4-chloro-2-hexyl- 18979-96-9, Phenol, 4-chloro-2-heptyl- 29106-32-9,  
Chaulmoogric acid  
(esters)

IT 33254-87-4, Salicylic acid, 5-chloroacetyl-, methyl ester 89408-99-1,  
Salicylic acid, 5-(5-carboxyvaleryl)- 92246-70-3, Valeric acid,  
5-(p-acetamidobenzoyl)- 100391-20-6, Valeric acid, 5-(p-aminobenzoyl)-  
101735-99-3, 1,6-Hexanediol, 1,6-bis(5-chloro-2-hydroxyphenyl)-  
113455-31-5, 1,10-Decanediol, 1,10-bis(5-chloro-2-hydroxyphenyl)-  
550372-19-5, Sebacic acid, bis(p-chlorophenyl) ester 855362-52-6,  
2,3-Cresotic acid, methyl ester, heptanoate 855403-44-0, Phenol,  
4-chloro-2-heptyl-6-hexyl- 855406-80-3, Phenol, 2,2'-decamethylenebis[4-  
chloro- 855412-64-5, Phenol, 2,2'-hexamethylenebis[4-chloro-  
855921-00-5, Heptanophenone, 5'-chloro-3'-hexyl-2'-hydroxy- 856182-62-2,  
2,3-Cresotic acid, 5-heptanoyl-, methyl ester 857480-74-1, Valeric acid,  
5-(5-chlorosalicyloyl)- 872286-42-5, 2,3-Cresotic acid, 5-heptanoyl-  
874000-02-9, 2,3-Cresotic acid, 5-heptyl-  
(prepn. of)

=> s resorcinol

28889 RESORCINOL  
836 RESORCINOLS

L8 29076 RESORCINOL  
(RESORCINOL OR RESORCINOLS)

=> s l8 and (laser or pattern or image or imaging or mask or photomask or hologra? or grating or p

516287 LASER  
160565 LASERS  
529574 LASER  
(LASER OR LASERS)

420919 PATTERN  
298727 PATTERNS  
651977 PATTERN  
(PATTERN OR PATTERNS)

207452 IMAGE  
126355 IMAGES  
290263 IMAGE  
(IMAGE OR IMAGES)

170798 IMAGING  
95 IMAGINGS  
170838 IMAGING  
(IMAGING OR IMAGINGS)

68039 MASK  
28337 MASKS  
79020 MASK  
(MASK OR MASKS)

8119 PHOTOMASK  
11861 PHOTOMASKS  
14927 PHOTOMASK

(PHOTOMASK OR PHOTOMASKS)

18309 HOLOGRA?

16486 HOLOG

14 HOLOGS

16488 HOLOG

(HOLOG OR HOLOGS)

21382 HOLOGRA?

(HOLOGRA? OR HOLOG)

32266 GRATING

19066 GRATINGS

37895 GRATING

(GRATING OR GRATINGS)

37140 PATTERNING

17 PATTERNINGS

37151 PATTERNING

(PATTERNING OR PATTERNINGS)

399920 INFORMATION

3027 INFORMATIONS

402336 INFORMATION

(INFORMATION OR INFORMATIONS)

L9 900 L8 AND (LASER OR PATTERN OR IMAGE OR IMAGING OR MASK OR PHOTOMASK OR HOLOGRA? OR GRATING OR PATTERNING OR INFORMATION)

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1006182 LIGHT

7570 LIGHTS

1008994 LIGHT

(LIGHT OR LIGHTS)

516287 LASER

160565 LASERS

529574 LASER

(LASER OR LASERS)

479832 UV

335 UVS

479949 UV

(UV OR UVS)

206460 ULTRAVIOLET

11 ULTRAVIOLETS

206468 ULTRAVIOLET

(ULTRAVIOLET OR ULTRAVIOLETS)

479832 UV

335 UVS

479949 UV

(UV OR UVS)

598250 ULTRAVIOLET

(ULTRAVIOLET OR UV)

L10 320 L9 AND (LIGHT OR LASER OR UV OR ULTRAVIOLET)

=> s l9 and (laser or uv or ultraviolet)

516287 LASER

160565 LASERS

529574 LASER

(LASER OR LASERS)

479832 UV

335 UVS

479949 UV

(UV OR UVS)

206460 ULTRAVIOLET

11 ULTRAVIOLETS

206468 ULTRAVIOLET

(ULTRAVIOLET OR ULTRAVIOLETS)

479832 UV

335 UVS

479949 UV

(UV OR UVS)

598250 ULTRAVIOLET

(ULTRAVIOLET OR UV)

L11 176 L9 AND (LASER OR UV OR ULTRAVIOLET)

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420919 PATTERN

298727 PATTERNS

651977 PATTERN  
     (PATTERN OR PATTERNS)  
 207452 IMAGE  
 126355 IMAGES  
 290263 IMAGE  
     (IMAGE OR IMAGES)  
 170798 IMAGING  
     95 IMAGINGS  
 170838 IMAGING  
     (IMAGING OR IMAGINGS)  
 68039 MASK  
 28337 MASKS  
 79020 MASK  
     (MASK OR MASKS)  
 8119 PHOTOMASK  
 11861 PHOTOMASKS  
 14927 PHOTOMASK  
     (PHOTOMASK OR PHOTOMASKS)  
 18309 HOLOGRA?  
 16486 HOLOG  
     14 HOLOGS  
 16488 HOLOG  
     (HOLOG OR HOLOGS)  
 21382 HOLOGRA?  
     (HOLOGRA? OR HOLOG)  
 32266 GRATING  
 19066 GRATINGS  
 37895 GRATING  
     (GRATING OR GRATINGS)  
 37140 PATTERNING  
     17 PATTERNINGS  
 37151 PATTERNING  
     (PATTERNING OR PATTERNINGS)  
 L12       702 L8 AND (PATTERN OR IMAGE OR IMAGING OR MASK OR PHOTOMASK OR  
             HOLOGRA? OR GRATING OR PATTERNING)

=> s l12 and (laser or uv or ultraviolet)

516287 LASER  
 160565 LASERS  
 529574 LASER  
     (LASER OR LASERS)  
 479832 UV  
     335 UVS  
 479949 UV  
     (UV OR UVS)  
 206460 ULTRAVIOLET  
     11 ULTRAVIOLETS  
 206468 ULTRAVIOLET  
     (ULTRAVIOLET OR ULTRAVIOLETS)  
 479832 UV  
     335 UVS  
 479949 UV  
     (UV OR UVS)  
 598250 ULTRAVIOLET  
     (ULTRAVIOLET OR UV)

L13       80 L12 AND (LASER OR UV OR ULTRAVIOLET)

=> d all 1-80

L13 ANSWER 1 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2005:330988 CAPLUS  
 DN 143:3444  
 ED Entered STN: 18 Apr 2005  
 TI Rapid separation of antimicrobial metabolites by microchip electrophoresis  
     with \*\*\*UV\*\*\* linear \*\*\*imaging\*\*\* detection  
 AU Guihen, Elizabeth; Glennon, Jeremy D.  
 CS Department of Chemistry, Analytical and Biological Chemistry Research  
     Facility (ABCRF), University College Cork, Cork, Ire.  
 SO Journal of Chromatography, A (2005), 1071(1-2), 223-228  
     CODEN: JCRAEY; ISSN: 0021-9673  
 PB Elsevier B.V.  
 DT Journal

LA English  
CC 9-1 (Biochemical Methods)  
AB This research examines microchip electrophoresis with linear  
\*\*\*imaging\*\*\* \*\*\*UV\*\*\* detection for the anal. of antimicrobial  
metabolites, monoacetylphloroglucinol (MAPG) and 2,4-  
diacetylphloroglucinol (2,4-DAPG) from *Pseudomonas fluorescens* F113.  
Initial results show the sepn. of MAPG, 2,4-DAPG and \*\*\*resorcinol\*\*\*  
in less than 20 s. This was achieved using a quartz microchip with a  
sepn. channel length of 25 mm. In order to quantitate the amt. of MAPG  
and 2,4-DAPG in a microbial cultured supernatant sample, on-chip sample  
introduction in a methanol/buffer matrix was investigated. Sample  
introduction/injection parameters were optimized to improve sensitivity  
and thus decrease the limit of detection (LOD). The amt. of antimicrobial  
metabolites present was quantitated with a sepn. time of 15 s. A  
previously developed capillary electrophoretic method was compared to the  
microchip method in relation to speed, efficiency, precision, linear range  
and limit of detection. This investigation shows the fastest sepn. so far  
of these antimicrobial metabolites with high efficiency.

ST monoacetylphloroglucinol diacetylphloroglucinol detn microchip  
electrophoresis \*\*\*UV\*\*\* ; *Pseudomonas* antimicrobial metabolite detn  
microchip sepn

IT \*\*\*Imaging\*\*\*  
( \*\*\*UV\*\*\* ; rapid sepn. of antimicrobial metabolites by microchip  
electrophoresis with \*\*\*UV\*\*\* linear \*\*\*imaging\*\*\* detection)

IT Electrophoresis  
(microchip; rapid sepn. of antimicrobial metabolites by microchip  
electrophoresis with \*\*\*UV\*\*\* linear \*\*\*imaging\*\*\* detection)

IT Antimicrobial agents  
Culture media  
Lab-on-a-chip  
*Pseudomonas fluorescens*  
Samples  
(rapid sepn. of antimicrobial metabolites by microchip electrophoresis  
with \*\*\*UV\*\*\* linear \*\*\*imaging\*\*\* detection)

IT Extraction  
(solid-phase; rapid sepn. of antimicrobial metabolites by microchip  
electrophoresis with \*\*\*UV\*\*\* linear \*\*\*imaging\*\*\* detection)

IT 108-46-3, \*\*\*Resorcinol\*\*\* , analysis 2161-86-6, 2,4-  
Diacetylphloroglucinol 16534-21-7, Monoacetylphloroglucinol  
RL: ANT (Analyte); ANST (Analytical study)  
(rapid sepn. of antimicrobial metabolites by microchip electrophoresis  
with \*\*\*UV\*\*\* linear \*\*\*imaging\*\*\* detection)

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE  
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ED Entered STN: 04 Mar 2005  
 TI Methods of photoaddressing a polymer composition and the articles derived therefrom  
 IN Chisholm, Bret Ja; McLaughlin, Michael Jeffrey  
 PA USA  
 SO U.S. Pat. Appl. Publ., 9 pp.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 IC ICM G11B007-24  
 INCL 430270140; 430945000; 219121650  
 CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 38  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2005048401	A1	20050303	US 2003-652016	20030829
	WO 2005022525	A1	20050310	WO 2004-US28084	20040827
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				

PRAI US 2003-652016 A 20030829

# CLASS

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
	US 2005048401	ICM	G11B007-24
		INCL	430270140; 430945000; 219121650
		IPCI	G11B0007-24 [ICM,7]
		IPCR	G11B0007-24 [I,A]; G11B0007-24 [I,C]
		NCL	430/270.140
		ECLA	G03F007/00B3
	WO 2005022525	IPCI	G11B0007-24 [ICM,7]
		IPCR	G11B0007-24 [I,A]; G11B0007-24 [I,C]
		ECLA	G03F007/00B3
AB	A method for manufg. data storage media comprising irradiating at least a portion of an org. polymer comprising a ***resorcinol*** arylate polyester with a ***UV*** beam having a wavelength of about 290 to about 700 nm so as to impart an energy of about 1 to about 20 mW/square centimeter to the irradiated portion of the org. polymer.		
ST	photoaddressing polymer compn ***holog*** recording		
IT	Polycarbonates, uses		
	RL: TEM (Technical or engineered material use); USES (Uses) (methods of photoaddressing a polymer compn. and the articles derived therefrom)		
IT	***Holographic*** recording materials (polymeric; methods of photoaddressing a polymer compn. and the articles derived therefrom)		
IT	100-21-0D, Terephthalic acid, ester, polymer with isophthalate, ***resorcinol***, carbonate 108-46-3D, ***Resorcinol***, polymer with isophthalate, terephthalate, carbonate 121-91-5D, Isophthalic acid, ester, polymer with terephthalate, ***resorcinol***, carbonate 3812-32-6D, Carbonate, polymer with isophthalate, terephthalate, ***resorcinol***		
	RL: TEM (Technical or engineered material use); USES (Uses) (methods of photoaddressing a polymer compn. and the articles derived therefrom)		

L13 ANSWER 3 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2004:993307 CAPLUS  
 DN 141:412128  
 ED Entered STN: 19 Nov 2004  
 TI Liquid epoxy resin composition for semiconductor device packaging, the packaged semiconductor device, and \*\*\*laser\*\*\* marking method

IN Namiki, Tsutomu  
PA Nippon Kayaku Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 9 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM C08L063-00  
ICS B41M005-26; C08G059-42; C08G059-62; C08K003-04; C08K003-22;  
H01L023-00; H01L023-29; H01L023-31  
CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 73, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004323762	A2	20041118	JP 2003-123273	20030428
PRAI	JP 2003-123273		20030428		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004323762	ICM	C08L063-00
	ICS	B41M005-26; C08G059-42; C08G059-62; C08K003-04; C08K003-22; H01L023-00; H01L023-29; H01L023-31
	IPCI	C08L0063-00 [ICM,7]; B41M0005-26 [ICS,7]; C08G0059-42 [ICS,7]; C08G0059-62 [ICS,7]; C08K0003-04 [ICS,7]; C08K0003-22 [ICS,7]; H01L0023-00 [ICS,7]; H01L0023-29 [ICS,7]; H01L0023-31 [ICS,7]
	FTERM	2H111/HA14; 2H111/HA23; 2H111/HA25; 2H111/HA32; 4J002/CC03X; 4J002/CD04W; 4J002/CD05W; 4J002/CD06W; 4J002/DA039; 4J002/DE149; 4J002/DE238; 4J002/DJ008; 4J002/DJ018; 4J002/EL136; 4J002/EN047; 4J002/EU117; 4J002/EU187; 4J002/EU197; 4J002/EW017; 4J002/EY017; 4J002/FD018; 4J002/FD14X; 4J002/FD146; 4J002/FD157; 4J002/GQ05; 4J002/HA01; 4J036/AA02; 4J036/AA05; 4J036/AC01; 4J036/AC05; 4J036/AD08; 4J036/AF08; 4J036/DA05; 4J036/DB05; 4J036/DB21; 4J036/DB22; 4J036/DC02; 4J036/DC31; 4J036/DC40; 4J036/DC45; 4J036/DC46; 4J036/DD07; 4J036/FA02; 4J036/FA03; 4J036/FA05; 4J036/FB08; 4J036/JA07; 4M109/AA01; 4M109/BA03; 4M109/CA12; 4M109/EA03; 4M109/EB02; 4M109/EB03; 4M109/EB04; 4M109/EB06; 4M109/EB07; 4M109/EB08; 4M109/EB12; 4M109/EB18; 4M109/EC01; 4M109/EC03; 4M109/EC05; 4M109/EC13; 4M109/GA08

AB The compn. contains an epoxy resin, a crosslinking agent, a crosslinking accelerator, an inorg. filler, carbon black, and Al(OH)3. The semiconductor device is that packaged by the compn. The semiconductor device is irradiated by \*\*\*laser\*\*\* for marking on the surface so that a clear white \*\*\*image\*\*\* is formed on the package. Thus, \*\*\*resorcinol\*\*\* diglycidyl ether (RGE) 30, bisphenol A diglycidyl ether (RE 310S) 70, a mixt. of methylenedimethylenetetrahydrophthalic anhydride and endomethylenetetrahydrophthalic anhydride (Kayahard MCD) 45, methyltetrahydrophthalic anhydride (Rikacid MT 500) 41, phenol novolak 13, 2,4-diamino-6-[2'-methylimidazol(1')]ethyl-s-triazine isocyanuric acid adduct (Curezol 2MA-OK-PW) 3, 3-glycidoxypropyltrimethoxysilane (Silaace S 510) 4, powd. SiO2 (Fuselex RD 8) 300, Al(OH)3 70, carbon black 1, and an antifoaming agent (BYK 057) 1 part were mixed, applied on a semiconductor element-mounted printed circuit board by printing, and heated to give a test piece giving clear white marks after \*\*\*laser\*\*\* irradiation.

ST liq epoxy resin semiconductor device packaging; \*\*\*laser\*\*\* marking epoxy resin semiconductor device

IT Carbon black, uses  
RL: MOA (Modifier or additive use); USES (Uses)  
(MA 100; liq. epoxy resin compn. for packaging of semiconductor device capable of \*\*\*laser\*\*\* marking)

IT Crosslinking agents  
Crosslinking catalysts  
Electronic packaging materials  
Heat-resistant materials  
\*\*\*Laser\*\*\* radiation  
Semiconductor devices  
Water-resistant materials  
(liq. epoxy resin compn. for packaging of semiconductor device capable of \*\*\*laser\*\*\* marking)



IT Epoxy resins, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (liq. epoxy resin compn. for packaging of semiconductor device capable  
 of \*\*\*laser\*\*\* marking)

IT Phenolic resins, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (novolak, crosslinking agent; liq. epoxy resin compn. for packaging of  
 semiconductor device capable of \*\*\*laser\*\*\* marking)

IT 25085-99-8P, RE 310S 151616-33-0P, RGE  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
 use); PREP (Preparation); USES (Uses)  
 (crosslinked with acid anhydride and phenolic resin; liq. epoxy resin  
 compn. for packaging of semiconductor device capable of \*\*\*laser\*\*\*  
 marking)

IT 68490-66-4, Curezol 2MA-OK-PW  
 RL: CAT (Catalyst use); USES (Uses)  
 (crosslinking accelerator, Curezol 2MA-OK-PW; liq. epoxy resin compn.  
 for packaging of semiconductor device capable of \*\*\*laser\*\*\*  
 marking)

IT 25134-21-8, Kayahard MCD 26590-20-5, Rikacid MT 500  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (crosslinking agent; liq. epoxy resin compn. for packaging of  
 semiconductor device capable of \*\*\*laser\*\*\* marking)

IT 60676-86-0, Fuselex RD 8  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (filler, FB 35; liq. epoxy resin compn. for packaging of semiconductor  
 device capable of \*\*\*laser\*\*\* marking)

IT 21645-51-2, Higilite H42, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (liq. epoxy resin compn. for packaging of semiconductor device capable  
 of \*\*\*laser\*\*\* marking)

L13 ANSWER 4 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:952053 CAPLUS

DN 142:262532

ED Entered STN: 10 Nov 2004

TI \*\*\*UV\*\*\* stable white polyester film

IN Kim, Sang Pil; Seo, Chang Ho; Seo, Gi Bong

PA Toray Saehan Inc., S. Korea

SO Repub. Korean Kongkae Taeho Kongbo, No pp. given

CODEN: KRXXA7

DT Patent

LA Korean

IC ICM C08J005-18

CC 38-3 (Plastics Fabrication and Uses)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	KR 2003075477	A	20030926	KR 2002-14722	20020319
PRAI	KR 2002-14722		20020319		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
KR 2003075477	ICM	C08J005-18
	IPCI	C08J0005-18 [ICM,7]

AB A \*\*\*UV\*\*\* stable white polyester film is provided, to obtain a polyester film having the \*\*\*UV\*\*\* stability, applicable to various field comprising printing, \*\*\*imaging\*\*\*, advertising, displaying and laminating. The \*\*\*UV\*\*\* stable white polyester film comprises 5-30% a mixt. of polyester with an intrinsic viscosity 0.9 dL/g and titanium with an av. particle size 0.1-5 .mu.m; 0.1-5% a silicon compd. with an av. particle size 1-10 .mu.m; 0.005-0.5% a fluorescent whitening agent; and 0.01-5% a \*\*\*UV\*\*\* stabilizer. Preferably the \*\*\*UV\*\*\* stabilizer is selected from benzophenone-based, benzotriazole-based, \*\*\*resorcinol\*\*\* monobenzoate-based, salicylate-based, hydroxybenzoate-based and formamidine-based \*\*\*UV\*\*\* absorbers, a hindered amine-based \*\*\*UV\*\*\* stabilizer, and an imino ester-based \*\*\*UV\*\*\* stabilizer.

ST \*\*\*UV\*\*\* stable fluorescent white polyester film

IT \*\*\*UV\*\*\* stabilizers

(compns. for \*\*\*UV\*\*\* stable white polyester film)

IT Polyesters, uses

RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)  
 (compns. for \*\*\*UV\*\*\* stable white polyester film)  
 IT Amines, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (hindered; compns. for \*\*\*UV\*\*\* stable white polyester film)  
 IT Films  
 (multilayer; compns. for \*\*\*UV\*\*\* stable white polyester film)  
 IT 119-61-9, Benzophenone, uses 136-36-7, \*\*\*Resorcinol\*\*\* monobenzoate  
 463-52-5, Formamidine 7440-32-6, Titanium, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (compns. for \*\*\*UV\*\*\* stable white polyester film)

L13 ANSWER 5 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2004:701689 CAPLUS  
 DN 141:233196  
 ED Entered STN: 27 Aug 2004  
 TI Sulfonyldiazomethanes for photoacid generators and resist  
 \*\*\*patterning\*\*\* process  
 IN Ohsawa, Youichi; Kobayashi, Katsuhiko; Yanagi, Yoshitaka; Maeda, Kazunori  
 PA Japan  
 SO U.S. Pat. Appl. Publ., 38 pp.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 IC ICM G03F007-004  
 ICS G03F007-30; C07C245-16  
 INCL 430170000; 430270100; 430326000; 430330000; 430905000; 430910000;  
 534558000  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 Section cross-reference(s): 38

FAN.CNT 1  

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004166432	A1	20040826	US 2004-776291	20040212
	JP 2004244358	A2	20040902	JP 2003-35055	20030213
PRAI	JP 2003-35055	A	20030213		

CLASS  

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004166432	ICM	G03F007-004
	ICS	G03F007-30; C07C245-16
	INCL	430170000; 430270100; 430326000; 430330000; 430905000; 430910000; 534558000
	IPCI	G03F0007-004 [ICM,7]; G03F0007-30 [ICS,7]; C07C0245-16 [ICS,7]
	IPCR	C07C0245-00 [I,C]; C07C0245-16 [I,A]; C07C0317-00 [I,C]; C07C0317-28 [I,A]; C08F0012-00 [I,C]; C08F0012-24 [I,A]; C09K0003-00 [I,A]; C09K0003-00 [I,C]; G03F0007-004 [I,A]; G03F0007-004 [I,C]; G03F0007-039 [I,A]; G03F0007-039 [I,C]; G03F0007-30 [I,A]; G03F0007-30 [I,C]; H01L0021-02 [I,C]; H01L0021-027 [I,A]
	NCL	430/170.000
JP 2004244358	IPCI	C07C0317-28 [ICM,7]; C08F0012-24 [ICS,7]; C09K0003-00 [ICS,7]; G03F0007-004 [ICS,7]; G03F0007-039 [ICS,7]; H01L0021-027 [ICS,7]
	FTERM	2H025/AA01; 2H025/AA02; 2H025/AA04; 2H025/AB16; 2H025/AC08; 2H025/AD03; 2H025/BE00; 2H025/BE10; 2H025/BG00; 2H025/CB08; 2H025/CB14; 2H025/CB17; 2H025/CC03; 2H025/CC20; 2H025/FA01; 2H025/FA12; 4H006/AA01; 4H006/AB92; 4H006/TA02; 4H006/TB04; 4J100/AB02Q; 4J100/AB03Q; 4J100/AB07P; 4J100/AJ02P; 4J100/AJ02Q; 4J100/AL03Q; 4J100/AL03R; 4J100/AL08P; 4J100/AL08Q; 4J100/AM43Q; 4J100/AM43R; 4J100/AR10Q; 4J100/BA02P; 4J100/BA03P; 4J100/BA04P; 4J100/BA14P; 4J100/BA14Q; 4J100/BA20P; 4J100/BA20Q; 4J100/BA72P; 4J100/BA72Q; 4J100/BC08P; 4J100/BC08Q; 4J100/BC21P; 4J100/BC21Q; 4J100/BC43P; 4J100/BC43Q; 4J100/JA38

OS MARPAT 141:233196  
 AB A chem. amplification type resist compn. comprising a specific

sulfonyldiazomethane contg. long-chain alkoxy groups has many advantages including improved resoln., improved focus latitude, minimized line width variation or shape degrdn. even on long-term PED, minimized debris left after coating, development and peeling, and improved \*\*\*pattern\*\*\* profile after development and is thus suited for microfabrication.

ST sulfonyldiazomethanes photoacid generator chem amplification photoresist  
\*\*\*patterning\*\*\* process

IT Photoresists  
(sulfonyldiazomethanes for photoacid generators and resist  
\*\*\*patterning\*\*\* process)

IT Photolithography  
(vacuum \*\*\*UV\*\*\* ; sulfonyldiazomethanes for photoacid generators and resist  
\*\*\*patterning\*\*\* process)

IT 67698-90-2P 745825-50-7P  
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. of sulfonyldiazomethanes for photoacid generators and resist  
\*\*\*patterning\*\*\* process)

IT 108-46-3, \*\*\*Resorcinol\*\*\*, reactions 109-65-9, n-Butyl bromide 111-25-1, 1-Bromohexane 123-31-9, Hydroquinone, reactions 452-86-8, 4-Methylcatechol  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(prepn. of sulfonyldiazomethanes for photoacid generators and resist  
\*\*\*patterning\*\*\* process)

IT 745825-51-8P 745825-52-9P 745825-53-0P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. of sulfonyldiazomethanes for photoacid generators and resist  
\*\*\*patterning\*\*\* process)

IT 14159-45-6, Bis(4-methylphenylsulfonyl)diazomethane 138529-81-4, Bis(cyclohexylsulfonyl)diazomethane 195723-94-5, (4-tert-Butoxyphenyl)diphenylsulfonium 10-camphorsulfonate 205514-94-9, N-10-Camphorsulfonyloxysuccinimide 220654-40-0  
RL: TEM (Technical or engineered material use); USES (Uses)  
(resist \*\*\*patterning\*\*\* process contg. sulfonyldiazomethanes for photoacid generators)

IT 24979-70-2D, Poly(p-hydroxystyrene), ethoxyethyl and/or butyoxycarbonyl groups or propanediol divinyl ether or acetyl protected 159296-87-4, tert-Butyl acrylate-p-hydroxystyrene copolymer 326925-68-2, 1-Ethylcyclopentyl methacrylate-p-hydroxystyrene copolymer 345580-95-2, 1-Ethylcyclopentyl methacrylate-p-hydroxystyrene-styrene copolymer 552840-49-0, 2-Ethyl-2-adamantyl acrylate-p-hydroxystyrene copolymer 552840-50-3 552840-52-5, Indene-p-hydroxystyrene copolymer 552840-54-7 645393-08-4, 2-Ethyl-2-adamantyl methacrylate-p-hydroxystyrene-indene copolymer 745825-58-5, 1-Ethylcyclopentyl methacrylate-p-hydroxystyrene-p-tert-pentyloxystyrene copolymer  
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)  
(resist \*\*\*patterning\*\*\* process contg. sulfonyldiazomethanes for photoacid generators and)

IT 745825-54-1P 745825-55-2P 745825-56-3P 745825-57-4P  
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(sulfonyldiazomethanes for photoacid generators and resist  
\*\*\*patterning\*\*\* process)

L13 ANSWER 6 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:633307 CAPLUS

DN 141:166768

ED Entered STN: 06 Aug 2004

TI Synthesis, spectroscopy, and photophysics of multi-chromophoric Zn(II) Group 8 metal complexes

IN Therien, Michael J.; Uyeda, Harry Tetsuo

PA The Trustees of the University of Pennsylvania, USA

SO U.S. Pat. Appl. Publ., 40 pp.

CODEN: USXXCO

DT Patent

LA English

IC ICM C08L001-00

INCL 524543000; 524556000; 546002000; 548402000

CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 26, 72, 73, 74

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004152826	A1	20040805	US 2003-403387	20030328
PRAI	US 2002-368493P	P	20020328		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004152826	ICM	C08L001-00
	INCL	524543000; 524556000; 546002000; 548402000
	IPCI	C08L0001-00 [ICM,7]
	IPCR	C07D0487-00 [I,C]; C07D0487-22 [I,A]
	NCL	524/543.000
	ECLA	C07D487/22+257E+209C+209C+209C+209C

OS MARPAT 141:166768

GI

/ Structure 30 in file .gra /

AB Novel multichromophoric complexes comprising R1-RA-[MC]-([RM]z-[MC])m-RA-R2 [MC = conjugated macrocycle; RA = covalent bond, C2-C20 alkenyl or alkynyl, C4-C14 cumulenyl; RM = C1-C20 alkyl, C2-C20 alkenyl or alkynyl, C4-C14 cumulenyl, C3-C50 aryl, and various arylalkynyl, heterocycloalkyl, heteroaryl, etc.; R1 = H, halo, protecting group, etc.; m = 0-50, z = 0 or 1] and their metal complexes, are provided. Polymeric compns. and devices comprising the same are also discussed. The complexes are characterized by a central bridging moiety comprising one or a plurality of linked conjugated macrocyclic mols. [MC] coupled to at least one inorg. moiety (R1 and/or R2 ) through org. linker RA. Prepn. methods include metal-mediated cross-coupling techniques. The complexes can be useful in nonlinear optical devices and other optoelectronic applications. The \*\*\*UV\*\*\* -visible spectra, cyclic voltammetry, and mol. first order hyperpolarizability of some prepd. example compds. of the invention, e.g., ethynyl-bridged ruthenium(II)/osmium(II) terpyridine zinc porphyrinato complexes I(PF6)2 (M = Ru, Os), are measured.

ST zinc porphyrin Group 8 metal terpyridine ethynyl linked prepn; NLO zinc porphyrin Group 8 metal terpyridine multichromophoric; optoelectronic zinc porphyrin Group 8 metal terpyridine multichromophoric; electrochem redox zinc porphyrin Group 8 metal terpyridine multichromophoric; polymer zinc Group 8 metal multichromophoric complex optoelectronic application

IT Group VIII element complexes  
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (Group 8; prepn., \*\*\*UV\*\*\* -visible spectra, and mol. first-order hyperpolarizability of multichromophoric zinc(II) Group 8 metal complexes for nonlinear optical devices and optoelectronic applications)

IT Redox reaction  
 (electrochem.; of multichromophoric ethynyl-linked zinc(II) porphyrinato Group 8 metal terpyridine complexes)

IT Nonlinear optical materials  
 (ethynyl-linked zinc(II) porphyrinato Group 8 metal terpyridine complexes and related multichromophoric complexes for NLO devices)

IT \*\*\*Holographic\*\*\* recording materials  
 Optical detectors  
 Optical limiting  
 Optical waveguides  
 Photorefractive materials  
 (ethynyl-linked zinc(II) porphyrinato Group 8 metal terpyridine complexes and related multichromophoric complexes for NLO devices and other optoelectronic applications)

IT Photoelectric devices  
 (ethynyl-linked zinc(II) porphyrinato Group 8 metal terpyridine complexes and related multichromophoric complexes for optoelectronic applications)

IT Optical hyperpolarizability  
 (mol. first-order hyperpolarizability of ethynyl-bridged ruthenium(II)/osmium(II) terpyridine zinc porphyrinato complexes and related multichromophoric zinc(II) Group 8 metal complexes)

IT \*\*\*UV\*\*\* and visible spectra

(of multichromophoric ethynyl-linked zinc(II) porphyrinato Group 8 metal terpyridine complexes)

IT Optical instruments  
(phase shifters; ethynyl-linked zinc(II) porphyrinato Group 8 metal terpyridine complexes and related multichromophoric complexes for NLO devices and other optoelectronic applications)

IT Fluoropolymers, uses  
Polyamic acids  
Polycarbonates, uses  
Polyesters, uses  
Polyimides, uses  
Polyolefins  
Polyurethanes, uses  
RL: DEV (Device component use); USES (Uses)  
(polymer compns. contg. ethynyl-linked zinc(II) porphyrinato Group 8 metal terpyridine complexes and related multichromophoric complexes for NLO devices and other optoelectronic applications)

IT Porphyrins  
RL: DEV (Device component use); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(prepn. of ethynyl-linked porphyrins and related multichromophoric complexes for NLO devices and other optoelectronic applications)

IT Metalloporphyrins  
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(zinc; prepn. of ethynyl-linked zinc(II) porphyrinato Group 8 metal terpyridine complexes and related multichromophoric complexes for NLO devices and other optoelectronic applications)

IT 171204-91-4 478183-91-4 478183-93-6  
RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(mol. first-order hyperpolarizability as multichromophoric complex for NLO devices and other optoelectronic applications)

IT 9003-53-6  
RL: DEV (Device component use); USES (Uses)  
(polymer compns. contg. ethynyl-linked zinc(II) porphyrinato Group 8 metal terpyridine complexes and related multichromophoric complexes for NLO devices and other optoelectronic applications)

IT 478183-87-8P 478183-89-0P 478183-95-8P  
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(prepn. of ethynyl-linked zinc(II) porphyrinato Group 8 metal terpyridine complexes and related multichromophoric complexes for NLO devices and other optoelectronic applications)

IT 478184-19-9P 478184-20-2P 478184-33-7P 731794-51-7P 731794-55-1P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(prepn. of ethynyl-linked zinc(II) porphyrinato Group 8 metal terpyridine complexes and related multichromophoric complexes for NLO devices and other optoelectronic applications)

IT 108-46-3, \*\*\*Resorcinol\*\*\*, reactions 624-95-3, 3,3-Dimethyl-1-butanol 1066-54-2, Trimethylsilylacetylene 21211-65-4, Dipyrromethane 72905-30-7 78389-87-4 97393-18-5 478184-36-0  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(prepn. of ethynyl-linked zinc(II) porphyrinato Group 8 metal terpyridine complexes and related multichromophoric complexes for NLO devices and other optoelectronic applications)

IT 149817-62-9P 183803-99-8P 211450-16-7P 478184-21-3P 478184-24-6P  
478184-27-9P 478184-29-1P 478184-31-5P 478184-34-8P 478184-35-9P  
478184-37-1P 478184-38-2P 478184-39-3P 478184-40-6P 478184-41-7P  
478184-42-8P 478184-44-0P 731794-60-8P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. of ethynyl-linked zinc(II) porphyrinato Group 8 metal terpyridine complexes and related multichromophoric complexes for NLO devices and other optoelectronic applications)

L13 ANSWER 7 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:633090 CAPLUS

DN 141:158224

ED Entered STN: 06 Aug 2004

TI Biaxially stretched multilayer polyester films with white opaque appearance

IN Suh, Chang-ho; Suh, Ki-bong; Kim, Sang-pil  
PA S. Korea  
SO U.S. Pat. Appl. Publ., 10 pp.  
CODEN: USXXCO  
DT Patent  
LA English  
IC ICM B32B001-00  
INCL 428141000  
CC 38-3 (Plastics Fabrication and Uses)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004151877	A1	20040805	US 2003-354171	20030130
PRAI	US 2003-354171		20030130		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004151877	ICM	B32B001-00
	INCL	428141000
	IPCI	B32B0001-00 [ICM,7]
	IPCR	B32B0027-36 [I,A]; B32B0027-36 [I,C]; B41M0005-00 [I,A]; B41M0005-00 [I,C]; G09F0013-20 [I,A]; G09F0013-20 [I,C]
	NCL	428/141.000
	ECLA	B32B027/36; B41M005/00; G09F013/20

AB The film having three layered structure (A/B/C) comprises (A) a glossy layer having gloss (60.degree.) .gtoreq.100%, (B) a layer contg. 5-30% inorg. particles and .ltoreq.0.5% fluorescent whitening agent and (C) a matte layer having gloss (60.degree.) .ltoreq.50%. The film, in which the inorg. particles are added to provide different surface characteristics at the front and back surfaces of the film, is used in a wide range of industrial applications such as printing, \*\*\*imaging\*\*\*, advertising and display,. Further, a flame retardant and/or a \*\*\*UV\*\*\* stabilizer are also added to the film to provide multi-functional properties. Thus, a film comprising A layer contg. 65/10/35 poly(ethylene terephthalate) (PET), PET with 5% silica and PET with 0.7% phosphorus-based fireproofing agent, B layer contg. 45/30/25 PET, PET with 50% titania and 0.15% fluorescent whitening agent (OB 1) and PET with 0.7% phosphorus-based fireproofing agent, and C layer contg. 30/45/25 PET, PET with 5% silica and PET with 0.7% phosphorus-based fireproofing agent was laminate, extruded and stretched longitudinally 3 times at 75-130.degree., and laterally 3.3 times at 90-145.degree. and heat treated 215-235.degree. to give a film showing LOI value 29 vol% and \*\*\*UV\*\*\* rejection rate 39 vol%.

ST polyester film multilayer biaxially stretched; white opaque appearance  
multilayer polyester film

IT Imides  
RL: MOA (Modifier or additive use); USES (Uses)  
( \*\*\*UV\*\*\* -stabilizers; biaxially stretched multilayer polyester films with white opaque appearance)

IT Fire-resistant materials  
Fireproofing agents  
Fluorescent brighteners  
Laminated plastic films  
\*\*\*UV\*\*\* stabilizers  
(biaxially stretched multilayer polyester films with white opaque appearance)

IT Polyesters, uses  
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
(biaxially stretched multilayer polyester films with white opaque appearance)

IT Amines, uses  
RL: MOA (Modifier or additive use); USES (Uses)  
(hindered, \*\*\*UV\*\*\* -stabilizers; biaxially stretched multilayer polyester films with white opaque appearance)

IT 69-72-7D, Salicylic acid, esters 95-14-7, 1H-Benzotriazole 119-61-9, Benzophenone, uses 136-36-7, \*\*\*Resorcinol\*\*\* monobenzoate 463-52-5D, Formamidine, derivs. 29656-58-4D, Hydroxybenzoic acid, esters  
RL: MOA (Modifier or additive use); USES (Uses)  
( \*\*\*UV\*\*\* -stabilizer; biaxially stretched multilayer polyester films with white opaque appearance)

IT 7631-86-9, Silica, uses 7727-43-7, Barium sulfate 13463-67-7, Titanium dioxide, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (biaxially stretched multilayer polyester films with white opaque appearance)

IT 25038-59-9, Poly(ethylene terephthalate), uses  
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (biaxially stretched multilayer polyester films with white opaque appearance)

IT 7723-14-0D, Phosphorus, derivs. 21645-51-2, Alumina trihydrate, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (fireproofing agent; biaxially stretched multilayer polyester films with white opaque appearance)

IT 1533-45-5, OB 1  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (fluorescent whitening agent; biaxially stretched multilayer polyester films with white opaque appearance)

L13 ANSWER 8 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:621300 CAPLUS

DN 142:235909

ED Entered STN: 04 Aug 2004

TI Large-scale homogeneous molecular templates for femtosecond time-resolved studies of the guest-host interaction

AU Siffalovic, P.; Michelswirth, M.; Bartz, P.; Decker, B.; Agena, C.; Schafer, C.; Molter, S.; Ros, R.; Bach, M.; Neumann, M.; Anselmetti, D.; Mattay, J.; Heinzmann, U.; Drescher, M.

CS Molekul und Oberflächenphysik, Fakultat für Physik, Universität Bielefeld, Bielefeld, 33615, Germany

SO Journal of Biotechnology (2004), 112(1-2), 139-149

CODEN: JBITD4; ISSN: 0168-1656

PB Elsevier B.V.

DT Journal

LA English

CC 9-16 (Biochemical Methods)

AB Self-assembled monolayer films based on iodobenzoyloxy-functionalized resorc[4]arenes were prep'd. on gold substrates to serve as model systems for future time-resolved studies of mol. recognition, a mechanism of outstanding importance in bioorg. systems. The film properties were tested using XPS, at. force microscopy (AFM) and \*\*\*imaging\*\*\* ellipsometry. An app. for time-resolved electron spectroscopy utilizing femtosecond soft x-ray pulses is capable of detecting iodine core-level photolines and the photoinduced dissocn. after \*\*\*UV\*\*\* illumination. The developed technique holds promise for tracking the temporal evolution of chem. shifts of at. markers as local probes for the dynamics of the guest-host interaction.

ST mol template guest host interaction

IT Self-assembled monolayers

(films; prepn. and chem. characterization of self-assembled monolayer films of iodobenzoyloxy-functionalized resorc[4]arenes on gold substrates as model systems for time-resolved studies of mol. recognition)

IT Molecular association

(guest-host; prepn. and chem. characterization of self-assembled monolayer films of iodobenzoyloxy-functionalized resorc[4]arenes on gold substrates as model systems for time-resolved studies of mol. recognition)

IT Molecular recognition

(prepn. and chem. characterization of self-assembled monolayer films of iodobenzoyloxy-functionalized resorc[4]arenes on gold substrates as model systems for time-resolved studies of mol. recognition)

IT 7440-57-5, Gold, biological studies

RL: BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)

(prepn. and chem. characterization of self-assembled monolayer films of iodobenzoyloxy-functionalized resorc[4]arenes on gold substrates as model systems for time-resolved studies of mol. recognition)

IT 74708-10-4DP, iodobenzoyloxy-functionalized 844693-33-0P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and chem. characterization of self-assembled monolayer films of iodobenzoyloxy-functionalized resorc[4]arenes on gold substrates as

model systems for time-resolved studies of mol. recognition)  
 IT 108-46-3, \*\*\*Resorcinol\*\*\* , reactions 112-45-8, 10-Undecenal  
 143-10-2, 1-Decanethiol 280-64-8, 9-BBN 1711-02-0  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (prepn. and chem. characterization of self-assembled monolayer films of  
 iodobenzoyloxy-functionalized resorc[4]arenes on gold substrates as  
 model systems for time-resolved studies of mol. recognition)  
 IT 161170-49-6P 171755-24-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (prepn. and chem. characterization of self-assembled monolayer films of  
 iodobenzoyloxy-functionalized resorc[4]arenes on gold substrates as  
 model systems for time-resolved studies of mol. recognition)

RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 RE

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 Means of Electron Spectroscopy 1967
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 VI and II

L13 ANSWER 9 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:530228 CAPLUS

DN 141:79315

ED Entered STN: 02 Jul 2004

TI Positive-working photosensitive composition containing polyvinyl formal

IN Sato, Tsutomu

PA Think Laboratory Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-032

ICS G03F007-00; G03F007-004

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)

Section cross-reference(s): 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004184548	A2	20040702	JP 2002-348975	20021129
PRAI	JP 2002-348975		20021129		

CLASS



PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004184548	ICM	G03F007-032
	ICS	G03F007-00; G03F007-004
	IPCI	G03F0007-032 [ICM,7]; G03F0007-00 [ICS,7]; G03F0007-004 [ICS,7]
	FTERM	2H025/AA04; 2H025/AA12; 2H025/AA14; 2H025/AB03; 2H025/AC08; 2H025/AD03; 2H025/BG00; 2H025/CB07; 2H025/CB30; 2H025/CB41; 2H025/CB45; 2H025/CC11; 2H025/FA17; 2H096/AA06; 2H096/BA09; 2H096/EA04; 2H096/GA08
AB	The compn. contains an alkali-sol. org. polymer bearing phenolic OH group or an epoxy resin formed by reacting phenolic OH group, an agent converting IR to heat, and polyvinyl formal as an alkali-sol. resin. The compn. is sensitive to IR ***laser***, shows good adhesion with substrate, high sensitivity, and gives sharp ***images*** without development residue.	
ST	IR sensitive pos photoresist polyvinyl formal; phenolic hydroxy group alkali soluble polymer photoresist	
IT	Positive photoresists (IR; pos. photoresist compn. contg. polymer with phenolic hydroxy group, polyvinyl formal, and light-to-heat converting agent)	
IT	Polyvinyl acetals RL: TEM (Technical or engineered material use); USES (Uses) (formals; pos. photoresist compn. contg. polymer with phenolic hydroxy group, polyvinyl formal, and light-to-heat converting agent)	
IT	Phenolic resins, uses RL: TEM (Technical or engineered material use); USES (Uses) (novolak; pos. photoresist compn. contg. polymer with phenolic hydroxy group, polyvinyl formal, and light-to-heat converting agent)	
IT	Epoxy resins, uses RL: TEM (Technical or engineered material use); USES (Uses) (pos. photoresist compn. contg. polymer with phenolic hydroxy group, polyvinyl formal, and light-to-heat converting agent)	
IT	Phenolic resins, uses RL: TEM (Technical or engineered material use); USES (Uses) (resol; pos. photoresist compn. contg. polymer with phenolic hydroxy group, polyvinyl formal, and light-to-heat converting agent)	
IT	59269-51-1, Polyvinylphenol 656826-24-3, m-Cresol-p-cresol-formaldehyde-***resorcinol*** -2,5-xilenol-3,5-xilenol copolymer RL: TEM (Technical or engineered material use); USES (Uses) (pos. photoresist compn. contg. polymer with phenolic hydroxy group, polyvinyl formal, and light-to-heat converting agent)	
L13	ANSWER 10 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN	
AN	2003:944770 CAPLUS	
DN	140:147679	
ED	Entered STN: 04 Dec 2003	
TI	New azobenzene chromophores as monomers for synthesis of polyesters	
AU	Schab-balcerzak, Ewa; Grabiec, Eugenia; Sek, Danuta; Miniewicz, Andrzej	
CS	Centre of Polymer Chemistry, Polish Academy of Sciences, Zabrze, 41-819, Pol.	
SO	Polymer Journal (Tokyo, Japan) (2003), 35(11), 851-858 CODEN: POLJB8; ISSN: 0032-3896	
PB	Society of Polymer Science, Japan	
DT	Journal	
LA	English	
CC	41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers) Section cross-reference(s): 25, 35, 73	
OS	CASREACT 140:147679	
AB	Two new azo chromophores: 2,4-dihydroxy-4'-nitroazobenzene and 2,4-dihydroxy-4-azo-(4'-nitroazobenzene)benzene have been prep'd. These diols have been applied as monomers for polyesters synthesized in condensation with isophthaloyl chloride and/or sebacoyl chloride. The polymers were identified by IR spectra and elemental anal. The character of the polymers was det'd. using X-ray spectroscopy. Thermal properties such as glass transition temp. and thermal stability were investigated using differential scanning calorimetry and thermogravimetric anal. These polymers with azobenzene groups could find potential applications as ***holog*** recording materials. Preliminary investigations of optical ***grating*** recording were carried out.	

ST \*\*\*resorcinol\*\*\* azo dye deriv polyester prep  
 IT Polyesters, preparation  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (azobenzene chromophores as monomers for synthesis of polyesters)  
 IT Diffraction \*\*\*gratings\*\*\*  
 \*\*\*Holographic\*\*\* diffraction \*\*\*gratings\*\*\*  
 (from polyesters based on azobenzene chromophore monomers)  
 IT Glass transition temperature  
 Thermal stability  
 \*\*\*UV\*\*\* and visible spectra  
 (of polyesters based on azobenzene chromophore monomers)  
 IT Azo dyes  
 (polymerizable; azobenzene chromophores as monomers for synthesis of  
 polyesters)  
 IT 649729-60-2P, 4-(4-Nitrophenylazo) \*\*\*resorcinol\*\*\* -sebacoyl chloride  
 copolymer 649729-61-3P, Isophthaloyl chloride-4-(4-nitrophenylazo)  
 \*\*\*resorcinol\*\*\* copolymer 649729-62-4P 649729-63-5P 649729-64-6P  
 649729-65-7P 651329-00-9P 651329-05-4P 651329-13-4P 651329-14-5P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (azobenzene chromophores as monomers for synthesis of polyesters)  
 IT 108-46-3, \*\*\*Resorcinol\*\*\*, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (coupling component; azobenzene chromophores as monomers for synthesis  
 of polyesters)  
 IT 100-01-6, p-Nitroaniline, reactions 730-40-5, 4-Amino-4'-nitroazobenzene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (diazo component; azobenzene chromophores as monomers for synthesis of  
 polyesters)  
 IT 649729-58-8P 649729-59-9P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (model compd.; azobenzene chromophores as monomers for synthesis of  
 polyesters)  
 IT 74-39-5P 649729-57-7P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (monomer; azobenzene chromophores as monomers for synthesis of  
 polyesters)  
 IT 98-88-4, Benzoyl chloride  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (starting material for model compd.; azobenzene chromophores as  
 monomers for synthesis of polyesters)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD

- RE
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L13 ANSWER 11 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2003:752679 CAPLUS  
 DN 139:268028  
 ED Entered STN: 25 Sep 2003  
 TI \*\*\*Image\*\*\* forming method  
 IN Nagase, Hiroyuki  
 PA Fuji Photo Film Co., Ltd., Japan  
 SO Eur. Pat. Appl., 37 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 IC ICM B41M005-36  
 ICS B41C001-10; G03F007-32  
 CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1346843	A1	20030924	EP 2003-6248	20030320

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

US 2003190555 A1 20031009 US 2003-392888 20030321

JP 2004004643 A2 20040108 JP 2003-79885 20030324

PRAI JP 2002-80852 A 20020322

# CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1346843	ICM	B41M005-36
	ICS	B41C001-10; G03F007-32
	IPCI	B41M0005-36 [ICM,7]; B41C0001-10 [ICS,7]; G03F0007-32 [ICS,7]
	IPCR	B41C0001-10 [I,A]; B41C0001-10 [I,C]; B41N0003-00 [I,C]; B41N0003-08 [I,A]; G03F0007-32 [I,A]; G03F0007-32 [I,C]
US 2003190555	ECLA	B41C001/10A; B41N003/08; G03F007/32A
	IPCI	G03F0007-038 [ICM,7]
	IPCR	B41C0001-10 [I,A]; B41C0001-10 [I,C]; B41N0003-00 [I,C]; B41N0003-08 [I,A]; G03F0007-32 [I,A]; G03F0007-32 [I,C]
	NCL	430/302.000
	ECLA	B41C001/10A; B41N003/08; G03F007/32A
JP 2004004643	IPCI	G03F0007-32 [ICM,7]; G03F0007-00 [ICS,7]; G03F0007-004 [ICS,7]
	FTERM	2H025/AA02; 2H025/AA12; 2H025/AA13; 2H025/AB03; 2H025/AC08; 2H025/AD01; 2H025/BC13; 2H025/BC42; 2H025/CA00; 2H025/CB13; 2H025/CB14; 2H025/CC11; 2H025/FA10; 2H025/FA17; 2H096/AA06; 2H096/BA05; 2H096/CA03; 2H096/EA04; 2H096/EA23; 2H096/GA10

OS MARPAT 139:268028

AB An \*\*\*image\*\*\* forming method using a neg. type \*\*\*image\*\*\* forming material is disclosed, and said method comprises the steps of exposing a neg. type \*\*\*image\*\*\* forming material to IR \*\*\*laser\*\*\* imagewise, which \*\*\*image\*\*\* forming material comprises a substrate and an \*\*\*image\*\*\* recording layer formed thereon, comprising (A) a radical generator, (B) a radical-polymerizable compd., (C) an IR absorbing agent, and (D) a binder polymer; and developing the \*\*\*image\*\*\* forming material with an alk. developing soln. comprising a weak acid or a salt thereof having a dissocn. const. pKa of 10-13.

ST printing plate \*\*\*image\*\*\*

IT Printing plates

(computer to plate; \*\*\*image\*\*\* forming method for computer to plate printing plate)

IT 522659-26-3

RL: TEM (Technical or engineered material use); USES (Uses)

(IR absorbing agent; \*\*\*image\*\*\* forming method for computer to plate printing plate \*\*\*image\*\*\* recording layer contg.)

IT 572921-81-4

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(binder; \*\*\*image\*\*\* forming method for computer to plate printing plate \*\*\*image\*\*\* recording layer contg.)

IT 76-37-9, 2,2,3,3-Tetrafluoropropanol-1

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(computer to plate printing plate developing soln. contg.)

IT 50-70-4, Sorbitol, uses 50-81-7, L-Ascorbic acid, uses 50-99-7, Glucose, uses 51-17-2, Benzimidazole 57-50-1, Sucrose, uses 67-52-7, Barbituric acid 68-94-0, Hypoxanthine 69-72-7, Salicylic acid, uses 69-89-6, Xanthine 75-89-8 87-66-1, Pyrogallol 92-70-6, 3-Hydroxy-2-naphthoic acid 94-67-7, 2-Hydroxybenzaldehyde oxime 95-45-4, Dimethylglyoxime 95-48-7, o-Cresol, uses 96-29-7, 2-Butanoneoxime 97-05-2, Sulfosalicylic acid 99-50-3, 3,4-Dihydroxybenzoic acid 106-44-5, p-Cresol, uses 108-39-4, m-Cresol, uses 108-46-3, \*\*\*Resorcinol\*\*\*, uses 115-20-8, Trichloroethanol 120-80-9, Catechol, uses 123-31-9, Hydroquinone, uses 127-06-0, Acetoxime 149-91-7, Gallic acid, uses 463-79-6, Carbonic acid, uses 530-97-2, 1,2-Cycloheptanedione dioxime 533-73-3, 1,2,4-Trihydroxybenzene 872-85-5, Pyridine-4-aldehyde 1121-60-4, Pyridine-2-aldehyde 2227-79-4, Thiobenzamide 2580-79-2, Ethanedi- amide dioxime 2809-21-4 6145-32-0, Isopropylidenediphosphonic acid 6145-33-1, 1,1-Ethylidenediphosphonic acid 7134-09-0 7664-38-2,

Phosphoric acid, uses 7699-41-4, Metasilicic acid 7722-84-1, Hydrogen peroxide, uses 7778-39-4, Arsenic acid 7783-06-4, Hydrogen sulfide, uses 10193-36-9, Orthosilicic acid 15834-09-0  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (computer to plate printing plate developing soln. contg.)

IT 572921-79-0  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (onium salt; \*\*\*image\*\*\* forming method for computer to plate printing plate \*\*\*image\*\*\* recording layer contg.)

IT 87605-70-7  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (polymerizable compd.; \*\*\*image\*\*\* forming method for computer to plate printing plate \*\*\*image\*\*\* recording layer contg.)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 RE  
 (1) Fuji Photo Film Co Ltd; EP 0716347 A 1996 CAPLUS  
 (2) Fuji Photo Film Co Ltd; EP 1120246 A 2001  
 (3) Kodak Polychrome Graphics Co Ltd; WO 0048836 A 2000  
 (4) Shell, L; US 4579811 A 1986 CAPLUS

L13 ANSWER 12 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2003:272178 CAPLUS  
 DN 138:311593  
 ED Entered STN: 09 Apr 2003  
 TI Photopolymerizable \*\*\*image\*\*\* -recoring material containing 350-450-nm light absorbing dye  
 IN Murota, Yasufumi  
 PA Fuji Photo Film Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 22 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G03F007-11  
 ICS G03F007-00; G03F007-004  
 CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 41

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2003107718	A2	20030409	JP 2001-300518	20010928
PRAI JP 2001-300518		20010928		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003107718	ICM	G03F007-11
	ICS	G03F007-00; G03F007-004
	IPCI	G03F0007-11 [ICM,7]; G03F0007-00 [ICS,7]; G03F0007-004 [ICS,7]

AB The photopolymerizable \*\*\*image\*\*\* -recoring material comprises a photopolymerizable layer reactive to 350-450-nm \*\*\*laser\*\*\* irradiation and an oxygen barrier layer on a support, wherein the support has an optical density of 0.05 at 350-450 nm. The support has a dye having the maximum absorption at 350-450 nm on the support. The photopolymerizable \*\*\*image\*\*\* -recoring material is useful for a CTP system.

ST photopolymerizable \*\*\*image\*\*\* recoring dye CTP system

IT Lithographic plates  
 (computer-to-plate; photopolymerizable \*\*\*image\*\*\* -recoring material contg. 350-450-nm light absorbing dye for CTP system)

IT Photoimaging materials  
 (photopolymerizable \*\*\*image\*\*\* -recoring material contg. 350-450-nm light absorbing dye for CTP system)

IT 74-39-5, 4-(4-Nitrophenylazo) \*\*\*resorcinol\*\*\* 101-89-3, Fast garnet GBC salt 298-93-1, MTT 1326-12-1, Thioflavin S 2243-76-7, Mordant orange 1 2465-27-2, Auramine O 6470-98-0, Mordant yellow 12 8064-60-6, Primulin 10127-05-6, Palatine fast yellow ELN  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (photopolymerizable \*\*\*image\*\*\* -recoring material contg. 350-450-nm light absorbing dye for CTP system)

DN 137:161356  
 ED Entered STN: 14 Aug 2002  
 TI Electrophotographic photoconductor showing high sensitivity to semiconductor \*\*\*laser\*\*\* , process cartridge, and electrophotographic apparatus  
 IN Tanaka, Masato; Hirano, Hidetoshi; Fujii, Atsushi; Hama, Kazue  
 PA Canon Inc., Japan  
 SO Jpn. Kokai Tokkyo Koho, 10 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G03G005-05  
 ICS G03G005-06  
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1  

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002229228	A2	20020814	JP 2001-22050	20010130
PRAI	JP 2001-22050		20010130		

CLASS  

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002229228	ICM	G03G005-05
	ICS	G03G005-06
	IPCI	G03G0005-05 [ICM,7]; G03G0005-06 [ICS,7]

OS MARPAT 137:161356  
 GI

/ Structure 31 in file .gra /

AB The invention relates to an electrophotog. photoconductor which contains a resorcinarene compd. represented by I (R1 = H, alkyl, aryl; R2 = H, alkyl, aryl, Ar-N:N-; Ar = arom. hydrocarbon, heterocycle) in a photosensitive layer. The photosensitive layer contains a phthalocyanine pigment or an azo pigment as a charge generation material. The photoconductor shows high sensitivity without increasing ghost \*\*\*image\*\*\* formation.  
 ST electrophotog photoconductor process cartridge app resorcinarene  
 IT Electrophotographic apparatus  
 Electrophotographic photoconductors (photoreceptors)  
 (electrophotog. photoconductor showing high sensitivity to semiconductor \*\*\*laser\*\*\* , process cartridge, and electrophotog. app.)  
 IT 26201-32-1 63371-84-6, Hydroxygallium phthalocyanine  
 RL: DEV (Device component use); USES (Uses)  
 (charge generation pigment in electrophotog. photoconductor with improved sensitivity and suppressed ghost \*\*\*image\*\*\* formation)  
 IT 108-46-3, \*\*\*Resorcinol\*\*\* , reactions 112-54-9, Dodecylaldehyde 369-20-0  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (prepn. of resorcinarene compd. for electrophotog. photoconductor to improve sensitivity and suppress ghost \*\*\*image\*\*\* formation)  
 IT 116780-43-9P  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (resorcinarene compd. for electrophotog. photoconductor to improve sensitivity and suppress ghost \*\*\*image\*\*\* formation)  
 IT 446037-86-1  
 RL: DEV (Device component use); USES (Uses)  
 (resorcinarene compd. in electrophotog. photoconductor to improve sensitivity and suppress ghost \*\*\*image\*\*\* formation)  
 IT 446037-83-8P  
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (resorcinarene compd. in electrophotog. photoconductor to improve sensitivity and suppress ghost \*\*\*image\*\*\* formation)

ED Entered STN: 16 May 2002  
 TI Synthesis and photochemical properties of NQD-esters based on  
 calix[4]arene derivatives for pre-sensitized offset plates  
 AU Myoung, Oung Chan; Choi, Hyun Ho; Ku, Yang Seo; Ahn, Chong Il; Chung, Gee  
 Won; Lee, Jung Bok  
 CS Fine Chemical Division, Agency for Technology and Standards, Kyunggi-Do,  
 427-010, S. Korea  
 SO Kongop Hwahak (2002), 13(2), 131-137  
 CODEN: KOHWE9; ISSN: 1225-0112  
 PB Korean Society of Industrial and Engineering Chemistry  
 DT Journal  
 LA Korean  
 CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 AB In this study, light sensitive naphthoquinone-(1,2)-diazide-5-sulfonic  
 acid esters (NQD-ester), based on calix[4]resorcinarene (C4-RA) and  
 calix[4]pyrogallene (C4-PA) derivs., were used as a ballast. They were  
 suitable for the pos. working photoactive compds. in the use of  
 pre-sensitized offset printing plates (PS plates). C4-RA derivs. were  
 synthesized from \*\*\*resorcinol\*\*\*, pyrogallol, and acetaldehyde by the  
 condensation reaction. C4-RA derivs. had a good soly. in highly polar  
 solvents and aq. alk. bases, and their optical properties were similar to  
 those of novolac resin. Synthesized C4-RA derivs. were partially  
 esterified with 2-diazo-naphthoquinone-5-sulfonyl chloride (NQD-Cl) to  
 give several NQD-esters. The hydroxyl groups left provided good soly. in  
 the org. solvents. Each of NQD-ester was formulated with novolac base  
 resin, and PS plates were manufd. Soly., thermal stability,  
 photosensitivity, compatible exposed time, and relative sensitivity were  
 detd. by soly. test, TGA, \*\*\*UV\*\*\* spectrophotometry, imaged by  
 \*\*\*UV\*\*\* lithog. techniques, and gray scale method, resp. NQD-ester  
 derivs., which is synthesized with C4-RA derivs., gave suitable  
 solubilities and photochem. properties. We found the optimal lithog.  
 properties, and obtained good \*\*\*images\*\*\* for PS plates.  
 ST presensitized printing plate ballast calixarene NQD ester  
 IT Printing plates  
 (presensitized; calix[4]resorcinarene- and calix[4]pyrogallene-derived  
 naphthoquinone-(1,2)-diazide-5-sulfonic acid ester for presensitized  
 printing plate ballast)  
 IT 75-07-0, Acetaldehyde, reactions 87-66-1, 1,2,3-Benzenetriol 108-46-3,  
 1,3-Benzenediol, reactions 3770-97-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (calix[4]resorcinarene- and calix[4]pyrogallene-derived  
 naphthoquinone-(1,2)-diazide-5-sulfonic acid ester for presensitized  
 printing plate ballast)  
 IT 65338-98-9P 137328-69-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (calix[4]resorcinarene- and calix[4]pyrogallene-derived  
 naphthoquinone-(1,2)-diazide-5-sulfonic acid ester for presensitized  
 printing plate ballast)  
 IT 454652-94-9P 454652-95-0P  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material  
 use); PREP (Preparation); USES (Uses)  
 (calix[4]resorcinarene- and calix[4]pyrogallene-derived  
 naphthoquinone-(1,2)-diazide-5-sulfonic acid ester for presensitized  
 printing plate ballast)  
 L13 ANSWER 15 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2002:176013 CAPLUS  
 DN 137:293796  
 ED Entered STN: 12 Mar 2002  
 TI Hydroxyl Free Radical-Mediated Oxidative Degradation of Quercetin and  
 Morin: A Preliminary Investigation  
 AU Makris, Dimitris P.; Rossiter, John T.  
 CS Department of Food Quality Management, Mediterranean Agronomic Institute  
 of Chania (MAICH), Chania, 73100, Peop. Rep. China  
 SO Journal of Food Composition and Analysis (2002), 15(1), 103-113  
 CODEN: JFCAEE; ISSN: 0889-1575  
 PB Elsevier Science Ltd.  
 DT Journal  
 LA English  
 CC 17-2 (Food and Feed Chemistry)

AB Quercetin and morin, two flavonol aglycons with a key difference in the B-ring structure, were oxidized by means of hydroxyl free radicals (HFRs), generated through a CuSO<sub>4</sub>/H<sub>2</sub>O<sub>2</sub> system. For comparison reasons, oxidns. with sodium periodate were also undertaken. Oxidns. were performed in 70% acetonitrile (MeCN), due to poor soly. of both flavonols in aq. media, and followed by \*\*\*UV\*\*\* -Vis spectroscopy and reversed-phase high-performance liq. chromatog. Quercetin and morin HFR-oxidn. resulted in six and four major products, resp. Among quercetin and morin degrdn. products, \*\*\*resorcinol\*\*\*, protocatechuic, 2,4-dihydroxybenzoic, and phloroglucinol carboxylic acids were tentatively identified. It is claimed that cleavage of quercetin and morin with HFRs is mediated by the formation of hemiketals or tautomeric compds., and proceeds through the same pathway, which does not depend on the B-ring substitution  
\*\*\*pattern\*\*\*.

ST quercetin morin radical oxidn product  
IT Oxidation  
(homolytic; hydroxyl free radical-mediated oxidative degrdn. of quercetin and morin)

IT 83-30-7, Phloroglucinol carboxylic acid 89-86-1, 2,4-Dihydroxybenzoic acid 99-50-3, Protocatechuic acid 108-46-3, \*\*\*Resorcinol\*\*\*, biological studies 117-39-5, Quercetin 480-16-0, Morin  
RL: BSU (Biological study, unclassified); BIOL (Biological study)  
(hydroxyl free radical-mediated oxidative degrdn. of quercetin and morin)

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE

- (1) Bors, W; Methods Enzymol 1990, V186, P343 CAPLUS
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- (23) van Acker, S; Free Rad Biol Med 1996, V20(3), P331 CAPLUS

L13 ANSWER 16 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2001:834303 CAPLUS  
DN 136:158719  
ED Entered STN: 18 Nov 2001  
TI Alcohol-assisted photocrosslinking of poly(vinyl alcohol) for water-soluble photoresists  
AU Shim, Sang-Yeon; Kim, Jong-Man  
CS Department of Industrial Chemistry, College of Engineering, Kangnung National University, Kangnung, 210-702, S. Korea  
SO Bulletin of the Korean Chemical Society (2001), 22(10), 1120-1122  
CODEN: BKCSDE; ISSN: 0253-2964  
PB Korean Chemical Society  
DT Journal  
LA English  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

AB Patterned neg.-tone \*\*\*images\*\*\* on the polymer film have been prepd. based on the photoinduced crosslinking of water sol. poly(vinyl alc.) (PVA) in the presence of various alcs. Irradn. of a polymer film contg. PVA, a photoacid generator and an alc. as a crosslinker with 254-nm \*\*\*UV\*\*\* through a \*\*\*photomask\*\*\* followed post-exposure bake (PEB) allowed generation of neg.-tone relief \*\*\*images\*\*\* at 5 .mu.m resoln.

in the polymer film. Among various alcs. tested, arom. alcs. such as pyrogallol and \*\*\*resorcinol\*\*\* were found to be superior to aliph. alcs. such as sucrose and inositol in terms of resist sensitivity.

ST alc assisted photocrosslinking poly(vinyl alc) water soluble lithog photoresist; photocrosslinker arom alc chem amplified poly(vinyl alc) photoresist

IT Negative photoresists  
(neg.-tone relief \*\*\*images\*\*\* formation based on photocrosslinking of poly(vinyl alc.) in water-sol. photoresists contg. photoacid generator and alc. crosslinker)

IT Crosslinking agents  
(photochem., alcs.; effect of alc. crosslinkers on sensitivity of photoresists based on poly(vinyl alc.) matrix and contg. photoacid generator)

IT Crosslinking  
(photochem.; neg.-tone relief \*\*\*images\*\*\* formation based on photocrosslinking of poly(vinyl alc.) in water-sol. photoresists contg. photoacid generator and alc. crosslinker)

IT 57-50-1, Sucrose, processes 87-66-1, Pyrogallol 87-89-8, Inositol 108-46-3, \*\*\*Resorcinol\*\*\*, processes  
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
(crosslinker; effect of alc. crosslinkers on sensitivity of photoresists based on poly(vinyl alc.) matrix and contg. photoacid generator)

IT 395067-94-4, Vinyl alcohol- \*\*\*resorcinol\*\*\* copolymer 395067-95-5, Vinyl alcohol-inositol copolymer 395067-96-6, Vinyl alcohol-sucrose copolymer 395067-97-7, Vinyl alcohol-pyrogallol copolymer  
RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); FORM (Formation, nonpreparative); PROC (Process); USES (Uses)  
(neg.-tone relief \*\*\*images\*\*\* formation based on photocrosslinking of poly(vinyl alc.) in water-sol. photoresists contg. photoacid generator and alc. crosslinker)

IT 9002-89-5D, Poly(vinyl alcohol), hydrolyzed  
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
(neg.-tone relief \*\*\*images\*\*\* formation based on photocrosslinking of poly(vinyl alc.) in water-sol. photoresists contg. photoacid generator and alc. crosslinker)

IT 180787-54-6, 2,4-Dihydroxyphenyl)dimethylsulfonium triflate  
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
(photoacid generator; neg.-tone relief \*\*\*images\*\*\* formation based on photocrosslinking of poly(vinyl alc.) in water-sol. photoresists contg. photoacid generator and alc. crosslinker)

RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD  
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L13 ANSWER 17 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2000:787372 CAPLUS  
DN 134:107909  
ED Entered STN: 10 Nov 2000



TI \*\*\*Image\*\*\* recording material based on the polymeric photobase  
 generator containing oxime-urethane groups  
 AU Chae, Kyu Ho; Gwark, Jung Choon; Chang, Taihyun  
 CS Department of Polymer Engineering and The Polymer Science & Technology  
 Research Center, Chonnam National University, Kwangju, 500-757, S. Korea  
 SO Macromolecular Rapid Communications (2000), 21(15), 1007-1012  
 CODEN: MRCOE3; ISSN: 1022-1336  
 PB Wiley-VCH Verlag GmbH  
 DT Journal  
 LA English  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 AB A polymeric photobase generator contg. oxime-urethane groups was prepd.  
 from copolymn. of Me methacrylate with N-[4-(benzophenoneoximinocarbonylam  
 ino)phenyl]maleimide, a maleimide monomer contg. oxime-urethane group, and  
 its properties as an \*\*\*image\*\*\* recording material were studied. The  
 irradiation of this copolymer with \*\*\*UV\*\*\* light disassociates the urethane  
 linkage to produce the arom. amino groups, which can be developed by the  
 diazo-coupling reaction. Various colors were developed depending on the  
 phenolic coupling developers.  
 ST \*\*\*image\*\*\* recording polymer photobase generator contg oxime urethane  
 group; photoimaging polymer photobase generator diazo coupling  
 IT Coupling reaction  
 (azo; polymer contg. oxime-urethane groups that can photogenerate arom.  
 pendant amines for generation of color \*\*\*images\*\*\* via  
 diazo-coupling reaction)  
 IT Photoimaging  
 (polymer contg. oxime-urethane groups that can photogenerate arom.  
 pendant amines for generation of color \*\*\*images\*\*\* via  
 diazo-coupling reaction)  
 IT Photoresists  
 (polymer contg. oxime-urethane groups that can photogenerate arom.  
 pendant amines for generation of color \*\*\*images\*\*\* via  
 diazo-coupling reaction in relation to)  
 IT Photoimaging materials  
 Photolysis  
 (polymer contg. oxime-urethane groups that can photogenerate arom.  
 pendant amines for generation of \*\*\*images\*\*\* via diazo-coupling  
 reaction)  
 IT 92-77-3, Naphthol AS 108-46-3, \*\*\*Resorcinol\*\*\*, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (coupling agent; polymer contg. oxime-urethane groups that can  
 photogenerate arom. pendant amines for generation of color  
 \*\*\*images\*\*\* via diazo-coupling reaction)  
 IT 497-19-8, Disodium carbonate, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (developer; polymer contg. oxime-urethane groups that can photogenerate  
 arom. pendant amines for generation of color \*\*\*images\*\*\* via  
 diazo-coupling reaction)  
 IT 318529-05-4P  
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP  
 (Preparation); RACT (Reactant or reagent)  
 (photobase generator; photoimaging with polymeric photobase generator  
 contg. oxime-urethane groups)  
 IT 7632-00-0, Sodium nitrite  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (polymer contg. oxime-urethane groups that can photogenerate arom.  
 pendant amines for generation of color \*\*\*images\*\*\* via  
 diazo-coupling reaction)  
 IT 78-67-1, AIBN  
 RL: CAT (Catalyst use); USES (Uses)  
 (polymn. of N-[4-(Benzophenoneoximinocarbonylamino)phenyl]maleimide  
 with Me methacrylate for photoimaging applications)  
 IT 318529-04-3P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (polymn. with Me methacrylate for photoimaging applications)  
 IT 77-58-7, Dibutyl tin dilaurate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with benzophenone oxime and N-[4-  
 (azidocarbonyl)phenyl]maleimide)  
 IT 574-66-3, Benzophenone oxime

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with benzophenone oxime and N-[4-(azidocarbonyl)phenyl]maleimide and di-Bu tin dilaurate)  
 IT 58174-51-9, N-[4-(Azidocarbonyl)phenyl]maleimide  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with benzophenone oxime and di-Bu tin dilaurate)  
 RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 RE  
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 L13 ANSWER 18 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2000:65764 CAPLUS  
 DN 132:121768  
 ED Entered STN: 27 Jan 2000  
 TI Chemical composition of barley tea  
 AU Kajimoto, Goro  
 CS Fac. Nutr., Kobe Gakuin Univ., Arise, Ikawadani-cho, Nishi-ku, Kobe-shi, 651-2113, Japan  
 SO Nippon Shokuhin Kagaku Kogaku Kaishi (2000), 47(1), 9-16  
 CODEN: NSKKEF; ISSN: 1341-027X  
 PB Nippon Shokuhin Kagaku Kogakkai  
 DT Journal  
 LA Japanese  
 CC 17-13 (Food and Feed Chemistry)  
 AB In the previous paper, we assessed the antioxidant activity of barley tea and their compn. In this paper, the chem. compn. in barley tea was investigated. Amts. of crude protein, Et ether ext., ash, iron, calcium and dietary fiber in barley grain, roasted barley grain and hot-water ext. obtained from roasted barley grain (referred to as barley tea hereafter) were measured by Kjeldahl method, extn. with Et ether by using Soxhlet app., ashing method, at. absorption spectrophotometry and AOAC (Assocn. of Official Anal. Chemists) anal. method, resp. Fatty acid and tocopherol (Toe) compn. were analyzed by GLC and HPLC. Barley tea was prepd. from barley grain roasted with a coffee roaster for 14 min, and purchased from market. Crude protein, fiber and Toe contents in barley grain were decreased by roasting, but, there were no consistent differences in calcium and iron contents in ash between the raw and roasted barley grains. On the other hand, contents of Et ether ext. obtained from roasted barley grain and barley tea were higher than those of the raw barley grain. Fiber content in barley tea was similar to that of raw barley grain. Formative ratio of triacylglycerol and linolenic acid in Et ether ext. obtained from barley tea was markedly lower than that from roasted barley grain. In addn., HPLC elution profiles and \*\*\*UV\*\*\* absorption \*\*\*patterns\*\*\* of barley, green tea, banana and Japanese persimmon teas were compared.  
 ST chem compn barley tea  
 IT Tea products  
 (beverages; chem. compn. of barley tea)  
 IT Barley  
 Dietary fiber

(chem. compn. of barley tea)

IT Diglycerides  
Fatty acids, biological studies  
Glycerides, biological studies  
Hydrocarbons, biological studies  
Mineral elements, biological studies  
Monoglycerides  
Sterols  
RL: BOC (Biological occurrence); BSU (Biological study, unclassified);  
BIOL (Biological study); OCCU (Occurrence)

(chem. compn. of barley tea)

IT Proteins, general, biological studies  
RL: BOC (Biological occurrence); BSU (Biological study, unclassified);  
BIOL (Biological study); OCCU (Occurrence)

(crude; chem. compn. of barley tea)

IT Sterols  
RL: BOC (Biological occurrence); BSU (Biological study, unclassified);  
BIOL (Biological study); OCCU (Occurrence)

(esters; chem. compn. of barley tea)

IT Lipids, biological studies  
RL: BOC (Biological occurrence); BSU (Biological study, unclassified);  
BIOL (Biological study); OCCU (Occurrence)

(polar; chem. compn. of barley tea)

IT 57-10-3, Palmitic acid, biological studies 59-02-9, .alpha.-Tocopherol  
60-33-3, Linoleic acid, biological studies 108-46-3, \*\*\*Resorcinol\*\*\*  
, biological studies 112-80-1, Oleic acid, biological studies  
119-13-1, .delta.-Tocopherol 120-80-9, Catechol, biological studies  
148-03-8, .beta.-Tocopherol 149-91-7, Gallic acid, biological studies  
373-49-9, Palmitoleic acid 463-40-1, .alpha.-Linolenic acid 490-23-3,  
.beta.-Tocotrienol 490-79-9, Gentisic acid 970-73-0, Gallocatechin  
989-51-5, (-)-Epigallocatechin gallate 1721-51-3, .alpha.-Tocotrienol  
7439-89-6, Iron, biological studies 7440-70-2, Calcium, biological  
studies 7616-22-0, .gamma.-Tocopherol 14101-61-2, .gamma.-Tocotrienol  
25612-59-3, .delta.-Tocotrienol  
RL: BOC (Biological occurrence); BSU (Biological study, unclassified);  
BIOL (Biological study); OCCU (Occurrence)

(chem. compn. of barley tea)

IT 60-29-7, Ethyl ether, uses  
RL: NUU (Other use, unclassified); USES (Uses)  
(exts. of; chem. compn. of barley tea)

L13 ANSWER 19 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1999:543633 CAPLUS  
ED Entered STN: 30 Aug 1999  
TI Novel dissolution inhibitors based on calixarene derivatives for use in  
chemical amplification resists.  
AU Ito, Hiroshi; Nakayama, Tomonari; Ueda, Mitsuru; Sherwood, Mark; Miller,  
Dolores  
CS K17/E1, IBM Almaden Research Center, San Jose, CA, 95120, USA  
SO Book of Abstracts, 218th ACS National Meeting, New Orleans, Aug. 22-26  
(1999), PMSE-068 Publisher: American Chemical Society, Washington, D. C.  
CODEN: 67ZJA5  
DT Conference; Meeting Abstract  
LA English  
AB Calix[4]resorcinarenes were prep'd. by reacting \*\*\*resorcinol\*\*\* with  
acetaldehyde, benzaldehyde, and 4-isopropylbenzaldehyde and fractionated  
into C4v and C2v isomers. The cyclic phenols bearing eight hydroxyl  
groups were characterized by IR and NMR. All eight phenolic groups were  
protected with t-butoxycarbonylmethyl and t-butoxycarbonyl. The fully  
protected calixresorsinarenes were subjected to variable temp. 1H and 13C  
NMR analyses to investigate the rotation of the pendant groups. Their  
interaction with 4-isopropylphenol was studied in soln. by 13C NMR and  
correlated with their dissoln. inhibition effect on a phenolic polymer in  
aq. base. The strong inhibition effect of the protected calixarenes has  
been confirmed and applied to deep \*\*\*UV\*\*\* lithog. \*\*\*imaging\*\*\*.

L13 ANSWER 20 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1999:202917 CAPLUS  
DN 130:339342  
ED Entered STN: 01 Apr 1999  
TI Aggregation of o,o'-dihydroxyazo dyes II. Interaction of  
2-hydroxy-4-nitrophenylazoresorcinol in DMSO and DMF

AU Dakiky, M.; Kanan, K.; Khamis, M.  
 CS Department of Chemistry and Chemical Technology, Faculty of Science and  
 Technology, Al-Quds University, East Jerusalem, Israel  
 SO Dyes and Pigments (1999), 41(3), 199-209  
 CODEN: DYPIDX; ISSN: 0143-7208  
 PB Elsevier Science Ltd.  
 DT Journal  
 LA English  
 CC 41-3 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic  
 Sensitizers)  
 Section cross-reference(s): 73  
 AB The aggregation behavior and tautomerism of several concns. (10-4-10-5mol  
 liter-1) of 4-(2-hydroxy-4-nitrophenylazo) \*\*\*resorcinol\*\*\* in DMSO and  
 DMF was investigated by \*\*\*UV\*\*\* -visible spectroscopy. The electronic  
 absorption spectra were recorded immediately after dissolving the dye  
 sample in the solvent. The absorption spectra of the solns. were then  
 measured on intervals through 36 days (868 h) at 22.degree.C. The lowest  
 concn. (1.times.10-5mol liter-1) gave an intense electronic absorption  
 band at 404 nm that was assigned to the azo monomer form. This absorption  
 \*\*\*pattern\*\*\* was slightly bathochromic shifted with time. Concns.  
 above 6 .times. 10-5mol L-1 gave two absorption bands at ca. 420 and ca.  
 520 nm. The former band was assigned to the dimeric form of the dye and  
 the latter one to the hydrazo monomeric form. The time dependence of the  
 electronic absorption spectra of all solns. above 6 .times. 10-5mol L-1  
 reflected a linear exchange from the absorption band at 520 nm  
 (hypochromically shifted) to the absorption band at 420 nm  
 (hyperchromically shifted). Equil. between the different species was  
 reached in about 450 h after mixing. Then, both bands were stable for ca.  
 100 h. After this time both bands started to reflect a hypochromic shift,  
 indicating degrdn. of the absorbing species. In DMF the time dependence  
 of the absorption spectra of 6.4.times.10-5mol liter-1 of the dye  
 reflected the same behavior of the dye in DMSO. However, the above  
 mentioned bands assigned to the dimer and the hydrazo monomer forms  
 appeared at ca. 470 and ca. 550 nm, resp. It was concluded that this  
 concn. time dependent interaction is most probably due to the shifting of  
 the hydrazo-azo equil., caused by the shifting of the dimer-monomer equil.  
 This reaction was followed kinetically using the initial rate method. The  
 obsd. kinetic profile resembles that of auto-catalyzed reactions. A  
 mechanism was proposed to account for the obsd. kinetics.  
 ST azo dye aggregation tautomerism kinetics; visible spectra azo dye  
 IT Tautomerization kinetics  
 Tautomers  
 (azo-hydrazone; spectra, aggregation and tautomerism of azo dye in DMSO  
 and DMF)  
 IT Self-association  
 \*\*\*UV\*\*\* and visible spectra  
 (spectra, aggregation and tautomerism of azo dye in DMSO and DMF)  
 IT 85079-14-7, 4-(2-Hydroxy-4-nitrophenylazo) \*\*\*resorcinol\*\*\*  
 RL: PRP (Properties); TEM (Technical or engineered material use); USES  
 (Uses)  
 (dye; spectra, aggregation and tautomerism of azo dye in DMSO and DMF)  
 RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD  
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 (9) Hamada, K; Dyes and Pigments 1991, V16, P165 CAPLUS  
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- (20) Saito, I; Kogy Kagaku Zasshi 1968, V70, P1715 CAPLUS
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- (23) Soltzbrg, L; J Chem Ed 1989, V66, P187
- (24) Titz, M; Collect Czech Chem Commun 1988, V53, P227 CAPLUS
- (25) Venkatarman, K; The chemistry of synthetic dyes 1952, VI-IV
- (26) Yamamoto, K; Dyes and Pigments 1989, V11, P137
- (27) Zhang, Y; Fenxi Huaxue 1989, V17, P1137 CAPLUS
- (28) Zollinger, H; Azo and Diazo Chemistry 1961

L13 ANSWER 21 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1996:618116 CAPLUS  
DN 125:261260  
ED Entered STN: 17 Oct 1996  
TI Positively working photoresist composition for fine processing  
IN Sato, Kenichiro; Kodama, Kunihiro; Shirakawa, Koji  
PA Fuji Photo Film Co Ltd, Japan  
SO Jpn. Kokai Tokkyo Koho, 20 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM G03F007-022  
ICS H01L021-027  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 08190195	A2	19960723	JP 1995-2791	19950111
	JP 3461397	B2	20031027		
PRAI	JP 1995-2791		19950111		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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JP 08190195	ICM	G03F007-022
	ICS	H01L021-027
	IPCI	G03F0007-022 [ICM,6]; H01L0021-027 [ICS,6]

AB In the compn. comprising an alkali-sol. resin and a photosensitive compd., the photosensitive compd. is .gtoreq.4-OH-contg. quinonediazidosulfonate ester having .gtoreq.3 benzene rings, in which each ring has .ltoreq.2 OH, and shows .gtoreq.50% \*\*\*pattern\*\*\* area assigned to .gtoreq.4-valent polyhydroxy quinonediazidosulfonate triester components by a HPLC using a 254-.mu.m \*\*\*UV\*\*\* detector. The compn. showed high sensitivity and good heat resistance.

ST alkali developable photoresist polyhydroxy quinonediazide sulfonate; HPLC \*\*\*pattern\*\*\* area quinonediazide sulfonate resist; polycyclic arom quinonediazide sulfonate photoresist

IT Phenolic resins, preparation  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(pos.-working photoresist compn. for fine processing)

IT Resists  
(photo-, pos.-working photoresist compn. for fine processing)

IT 27029-76-1P, m-Cresol-p-cresol-formaldehyde copolymer 100346-90-5P, m-Cresol-p-cresol-formaldehyde-2,5-xilenol copolymer 123236-78-2P 147212-16-6P, o-Cresol-p-cresol-2,3-dimethylphenol-2,6-dimethylphenol-formaldehyde-2,3,5-trimethylphenol copolymer 167933-24-6P 182073-13-8P 182073-14-9P 182073-15-0P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(pos.-working photoresist compn. for fine processing)

IT 50-00-0, Formaldehyde, reactions 88-69-7, 2-Isopropylphenol 95-57-8, 2-Chlorophenol 106-48-9, 4-Chlorophenol 107-30-2, Chloromethyl methyl ether 108-46-3, \*\*\*Resorcinol\*\*\*, reactions 108-95-2, Phenol, reactions 119-42-6, 2-Cyclohexylphenol 1806-29-7, O,O'-Biphenol  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(pos.-working photoresist compn. for fine processing)

L13 ANSWER 22 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1996:595771 CAPLUS  
DN 125:261256  
ED Entered STN: 05 Oct 1996

TI Photosensitive resin compositions and \*\*\*patterning\*\*\* using it  
 IN Uragami, Tatsunobu; Takuma, Hirotsuke; Yamaguchi, Teruhiro  
 PA Mitsui Toatsu Chemicals, Japan  
 SO Jpn. Kokai Tokkyo Koho, 9 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G03F007-023  
 ICS C08L065-00; G03F007-022  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 Section cross-reference(s): 38, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08179502	A2	19960712	JP 1994-325445	19941227
PRAI	JP 1994-325445		19941227		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 08179502	ICM	G03F007-023
	ICS	C08L065-00; G03F007-022
	IPCI	G03F0007-023 [ICM,6]; C08L0065-00 [ICS,6]; G03F0007-022 [ICS,6]

OS MARPAT 125:261256  
 GI

/ Structure 32 in file .gra /

AB The title resin compns. comprise an alkali-sol. resin component contg. 10-100 wt.% of a phenol-dicyclopentadiene resin I (R1, R2 = H, C1-4 lower alkyl, Ph, halo, OH; n = 0-20) and a photoreactive component. The photoreactive component may be .gtoreq.1 selected from 1,2-naphthoquinone-2-azides and their sulfonate or a compd. R5(NR4COCN2COR3)m (R3 = C1-6 alkyl, alkoxy; R4 = H, C1-6 alkyl, when both R3 and R4 are alkyl groups, they may form a ring; R5 = polyfunctional aliph. group; m .gtoreq.3). A \*\*\*patterning\*\*\* method is also claimed, in which a coating of the compn. is light-irradiated to form a \*\*\*pattern\*\*\* of semiconductor devices. The phenol-dicyclopentadiene resin shows less absorption at 248 nm, and the resist gives high resolu. \*\*\*patterns\*\*\* with high photosensitivity and good profile by using KrF excimer \*\*\*laser\*\*\*.

ST photoresist phenol cyclopentadiene resin  
 IT Phenolic resins, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (photoresist compn. contg. phenol-dicyclopentadiene resin)  
 IT Semiconductor devices  
 (photoresist compn. contg. phenol-dicyclopentadiene resin for manuf. of semiconductor devices)  
 IT Resists  
 (photo-, photoresist compn. contg. phenol-dicyclopentadiene resin)  
 IT 59269-51-1D, Polyhydroxystyrene, hydrogenated  
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (PHM C; photoresist compn. contg. phenol-dicyclopentadiene resin)  
 IT 3770-97-6, 1,2-Naphthoquinonediazide-5-sulfonyl chloride 77514-65-9, Tetrahydroxybenzene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (esterification of)  
 IT 30420-31-6P, Dicyclopentadiene-phenol copolymer  
 RL: PNU (Preparation, unclassified); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (photoresist compn. contg. phenol-dicyclopentadiene resin)  
 IT 25053-88-7, p-Cresol-formaldehyde copolymer 25086-36-6, m-Cresol-formaldehyde copolymer 31014-41-2, p-Cresol-dicyclopentadiene copolymer 59269-51-1, Polyhydroxystyrene 68850-58-8, Dicyclopentadiene-2,6-xylenol copolymer 90960-68-2, o-Cresol-dicyclopentadiene copolymer 90960-69-3, m-Cresol-dicyclopentadiene copolymer 105596-72-3, 4-Bromophenol-dicyclopentadiene copolymer 110083-44-8, Dicyclopentadiene- \*\*\*resorcinol\*\*\* copolymer

133136-83-1, Milex 2000 146938-18-3, Dicyclopentadiene-o-phenylphenol copolymer 146938-19-4, Dicyclopentadiene-p-phenylphenol copolymer 163149-16-4, Catechol-dicyclopentadiene copolymer 181478-85-3, Dicyclopentadiene-2,4-xylenol copolymer 181478-87-5, tert-Butylphenol-dicyclopentadiene copolymer 181478-89-7, Dicyclopentadiene-hydroquinone copolymer 181478-91-1, 2-Bromophenol-dicyclopentadiene copolymer 181478-92-2, Dicyclopentadiene-2-iodophenol copolymer 181478-93-3, Dicyclopentadiene-4-iodophenol copolymer 181478-94-4, 2-Chlorophenol-dicyclopentadiene copolymer 181478-95-5, 4-Chlorophenol-dicyclopentadiene copolymer 181478-96-6, 2,4-Dibromophenol-dicyclopentadiene copolymer 181478-97-7, 2,6-Dibromophenol-dicyclopentadiene copolymer 181479-00-5, Dicyclopentadiene-2,4-diiodophenol copolymer 181479-01-6, Dicyclopentadiene-2,6-diiodophenol copolymer

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(photoresist compn. contg. phenol-dicyclopentadiene resin)

IT 9011-13-6, Maleic anhydride-styrene copolymer

RL: TEM (Technical or engineered material use); USES (Uses)

(photoresist compn. contg. phenol-dicyclopentadiene resin)

IT 181658-12-8P

RL: MOA (Modifier or additive use); PNU (Preparation, unclassified); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(photosensitive agent; photoresist compn. contg. phenol-dicyclopentadiene resin)

IT 100497-14-1 110673-14-8 120504-13-4 136958-90-2, Bisphenol A 1,2-naphthoquinonediazide-4-sulfonate 138168-74-8 138168-75-9 138191-79-4 144919-37-9 172320-04-6 176849-99-3 181479-02-7 181479-03-8 181479-04-9 181479-06-1 181658-11-7 181658-13-9, Dicyclopentadiene-phenol copolymer 1,2-naphthoquinonediazide-4-sulfonate 181829-81-2 181829-82-3 181829-83-4 181960-70-3 182072-28-2

RL: MOA (Modifier or additive use); POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(photosensitive agent; photoresist compn. contg. phenol-dicyclopentadiene resin)

IT 181658-10-6P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(photosensitive agent; photoresist compn. contg. phenol-dicyclopentadiene resin)

L13 ANSWER 23 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1995:865357 CAPLUS

DN 123:312592

ED Entered STN: 19 Oct 1995

TI Cereal grain resorcinolic lipids: mono and dienolic homologues are present in rye grains

AU Kozubek, Arkadiusz; Tyman, John H. P.

CS Institute of Biochemistry, University of Wroclaw, Przybyszewskiego 63/77, Wroclaw, 51-148, Pol.

SO Chemistry and Physics of Lipids (1995), 78(1), 29-35

CODEN: CPLIA4; ISSN: 0009-3084

PB Elsevier

DT Journal

LA English

CC 17-11 (Food and Feed Chemistry)

AB Analyses ( \*\*\*UV\*\*\* , IR, 1H-NMR, MS) of the main phenolic fractions isolated by sequential sepn. on normal-phase and by argentation chromatog. on silica gel confirmed the presence of monoenoic and dienolic homologues of 1,3-dihydroxy-5-n-alkylbenzene in acetone exts. from rye grains. Conversion of mono and dienolic homolog di-Me ethers to the cis-diols with osmium tetroxide, transformation of the diol to the acetone with acetone and subsequent MS anal. of resulting derivs. showed that the breakdown \*\*\*pattern\*\*\* for the monoenoic homologues was consistent with a double bond in all the homologous chain at the 8-position. For dienes, the results were not so conclusive, although the 8- and 11-positions appear to be the favored ones. It has been also shown that rye 5-n-ketoalkylresorcinols contain a previously unobserved C17 homolog. All identifications were confirmed by comparison with synthetically obtained C19:0 and C21:0 5-n-alkylresorcinols and a 5-n-(2-keto-heptadecyl)

\*\*\*resorcinol\*\*\* . Other minor phenolic components present in the acetone ext. were identified as homologous 5-n-(2-hydroxyalkyl) \*\*\*resorcinols\*\*\* .

ST rye grain resorcinolic lipid  
IT Rye  
(cereal grain resorcinolic lipids - mono and dienolic homologs are present in rye grains)

IT Phenols, biological studies  
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)  
(cereal grain resorcinolic lipids - mono and dienolic homologs are present in rye grains)

IT 108-46-3D, 1,3-Dihydroxy-benzene, 5-n-alkyl-, homologs  
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)  
(cereal grain resorcinolic lipids - mono and dienolic homologs are present in rye grains)

IT 35176-46-6, 5-n-Nonadecylresorcinol. 170310-54-0  
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence)  
(cereal grain resorcinolic lipids - mono and dienolic homologs are present in rye grains)

L13 ANSWER 24 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1995:762807 CAPLUS  
DN 123:325598  
ED Entered STN: 29 Aug 1995  
TI Divinylbenzene-resorcin resins for photoresists  
AU Li, Jianxin; Yu, Shangxian; Gu, Jiangnan  
CS Institute of Applied Chemistry, Beijing Normal University, Beijing, 100875, Peop. Rep. China  
SO Journal of Photopolymer Science and Technology (1995), 8(1), 147-54  
CODEN: JSTEEW; ISSN: 0914-9244  
PB Technical Association of Photopolymers, Japan  
DT Journal  
LA English  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

AB The Friedel-Crafts reaction between divinylbenzene (DVB) and resorcin produced a new type of photopolymer: DVB-resorcin (DVBR) resin. The photosensitive system including DVBR and a photosensitizer such as 2,6-bis-(4'-azidobenzal)-4-Me cyclohexanone (BAC-M) can be used as a type of neg. photoresist. After exposure, the resists can be developed by dil. alk. aq., the resulted \*\*\*image\*\*\* is clear-cut with a resoln. of 2 .mu.m. The min. quantity of exposure energy required for photocuring of these comps. (Emin) is 1.55 .times. 10-2 J/cm2. They also have excellent resistance to acids and hydrocarbon-type oils. The exothermal phenomena of the reactions between DVB and various phenols have been investigated. When toluenesulfonic acid is used as a catalyst, the solvent-free reaction between DVB and resorcin is mainly charge controlled. Their photocuring process is monitored by \*\*\*UV\*\*\* spectrophotometry and a p-quinimine compd. is suggested as the main product of the photocuring process.

ST divinylbenzene \*\*\*resorcinol\*\*\* copolymer lithog photoresist  
IT Phenolic resins, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(lithog. neg. photoresists based on divinylbenzene-phenol deriv. copolymer and photosensitizer)

IT Resists  
(photo-, neg.-working, lithog. neg. photoresists based on divinylbenzene-phenol deriv. copolymer and photosensitizer)

IT 104-15-4, Toluenesulfonic acid, uses  
RL: CAT (Catalyst use); USES (Uses)  
(in prepn. of divinylbenzene-resorcin copolymer for application as lithog. neg. photoresist)

IT 146249-03-8P, Divinylbenzene-resorcin copolymer  
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(lithog. neg. photoresist based on divinylbenzene-resorcin copolymer and photosensitizer)

IT 5284-79-7, 2,6-Bis-(4'-azidobenzal)-4-methyl cyclohexanone 61804-69-1, Divinylbenzene-phenol copolymer 146249-03-8, Divinylbenzene-catechol



copolymer 146249-04-9, Divinylbenzene-m-cresol copolymer 170467-27-3,  
Divinylbenzene-phloroglucinol copolymer 170467-28-4,  
Divinylbenzene-pyrogallol copolymer  
RL: TEM (Technical or engineered material use); USES (Uses)  
(lithog. neg. photoresists based on divinylbenzene-phenol deriv.  
copolymer and photosensitizer)

L13 ANSWER 25 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1995:41986 CAPLUS  
DN 122:226631  
ED Entered STN: 08 Nov 1994  
TI Regulation of azimuthal anisotropy of nematic liquid crystals by  
azobenzene monolayers absorbing linearly polarized visible light  
AU Ishimura, K.; Hayashi, Y.; Ikeda, T.; Ishizuki, N.  
CS Res. Lab. Resources Utilization, Tokyo Inst. Tech., Yokohama, 227, Japan  
SO Chem. Funct. Dyes, Proc. Int. Symp., 2nd (1993), Meeting Date 1992,  
359-64. Editor(s): Yoshida, Z.; Shirota, Y. Publisher: Mita Press, Tokyo,  
Japan.  
CODEN: 59TQAX  
DT Conference  
LA English  
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
AB The photochem. liq. crystals (LC) alignment alteration mediated by  
monolayered command mols. has been very recently extended to the  
regulation of in-plane reorientation of LC mols. triggered by an Az or a  
spiropyran with use of linearly polarized \*\*\*UV\*\*\* light. Closely  
related surface-mediated in-plane regulation of LC was performed by  
exposure of a rubbed polyimide thin film doped with a dichroic dye to  
linearly polarized Ar \*\*\*laser\*\*\* beam with higher intensity. This  
work aims at binding azobenzene moieties laterally onto substrate surfaces  
instead of the conventional surface modification using head-on type  
azobenzenes in order to let even the trans form induce planar alignment of  
nematic liq. crystals. It was found that the n-pi\* excitation with  
linearly polarized visible light causes the azimuthal reorientation of LC  
although the photostationary state of the azobenzene on the surface  
consists predominantly of the trans isomer.  
ST nematic liq crystal azimuthal anisotropy control; azobenzene deriv liq  
crystal alignment control  
IT Optical \*\*\*imaging\*\*\* devices  
(electrooptical liq.-crystal, nematic; azobenzene monolayers absorbing  
linearly polarized visible light in control of azimuthal anisotropy of)  
IT Liquid crystals  
(nematic, azobenzene monolayers absorbing linearly polarized visible  
light in control of azimuthal anisotropy of)  
IT 78-07-9, Ethyl triethoxysilane  
RL: DEV (Device component use); USES (Uses)  
(control of azimuthal anisotropy of nematic liq. crystals by azobenzene  
monolayers absorbing linearly polarized visible light)  
IT 115288-48-7, DON 103 150668-95-4  
RL: DEV (Device component use); PEP (Physical, engineering or chemical  
process); PROC (Process); USES (Uses)  
(control of azimuthal anisotropy of nematic liq. crystals by azobenzene  
monolayers absorbing linearly polarized visible light)  
IT 157279-43-1P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and alkylation)  
IT 919-30-2, 3-Aminopropyltriethoxysilane  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction with azobenzene carboxylic acid deriv.)  
IT 157279-28-2P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(reaction with bromoalkanoate)  
IT 136-36-7, \*\*\*Resorcinol\*\*\* monobenzoate  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction with diazonium salt of hexyl aniline)  
IT 111338-09-1  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction with \*\*\*resorcinol\*\*\* monobenzoate)

L13 ANSWER 26 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1994:469561 CAPLUS  
 DN 121:69561  
 ED Entered STN: 06 Aug 1994  
 TI Deep \*\*\*UV\*\*\* sensitive resistant to latent \*\*\*image\*\*\* decay  
 comprising a diazonaphthoquinone sulfonate of a nitrobenzyl derivative  
 IN Lazarus, Richard M.; Koes, Thomas A.  
 PA Morton International, Inc., USA  
 SO U.S., 6 pp.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 IC ICM G03F007-023  
 ICS G03F007-30  
 INCL 430165000  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5314782	A	19940524	US 1993-26934	19930305
	CA 2111633	AA	19940906	CA 1993-2111633	19931216
	EP 614121	A1	19940907	EP 1994-300059	19940106
	EP 614121	B1	19960731		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE				
	AT 141020	E	19960815	AT 1994-300059	19940106
	JP 06301201	A2	19941028	JP 1994-34687	19940304
	JP 2698547	B2	19980119		
	CN 1096595	A	19941221	CN 1994-102363	19940304
PRAI	US 1993-26934	A	19930305		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 5314782	ICM	G03F007-023
	ICS	G03F007-30
	INCL	430165000
	IPCI	G03F0007-023 [ICM,5]; G03F0007-30 [ICS,5]
	IPCR	G03F0007-004 [I,A]; G03F0007-004 [I,C]; G03F0007-022 [I,A]; G03F0007-022 [I,C]
	NCL	430/165.000; 430/190.000; 430/191.000; 430/192.000; 430/193.000; 430/270.100; 430/271.100; 534/557.000
CA 2111633	IPCI	G03F0007-039 [ICM,5]; G03F0007-022 [ICS,5]
EP 614121	IPCI	G03F0007-022 [ICM,5]; C07C0205-19 [ICS,5]
	IPCR	G03F0007-004 [I,A]; G03F0007-004 [I,C]; G03F0007-022 [I,A]; G03F0007-022 [I,C]
	ECLA	G03F007/004D; G03F007/022
AT 141020	IPCI	G03F0007-022 [ICM,6]; C07C0205-19 [ICS,6]
JP 06301201	IPCI	G03F0007-004 [ICM,5]; G03F0007-039 [ICS,5]; H01L0021-027 [ICS,5]
CN 1096595	IPCI	G03F0007-039 [ICM,5]

OS MARPAT 121:69561  
 AB A pos. working deep \*\*\*UV\*\*\* sensitive photoresist comprises an acid stable polymer which is insol. in H2O but normally sol. in an aq. alk. medium, a photo acid generator exemplified by the tri-(2,1,4-diazonaphthoquinone sulfonate) ester of 3,5-dinitro-2,6-dimethylol para cresol, and a mixed carbonate ester of Me3COH and a polyhydric phenol which is an acid labile compd. which inhibits the dissoln. of the normally sol. polymer in the alk. medium. The compn. provides improved crit. dimensional stability during prolonged periods of post exposure delay before baking.  
 ST photoresist azonaphthoquinone sulfonate nitrobenzyl deriv  
 IT Resists  
 (photo-, with improve dimensional stability, comprising diazonaphthoquinone sulfonate of nitrobenzyl deriv.)  
 IT 108-46-3D, \*\*\*Resorcinol\*\*\*, reaction product with Bu carbonate  
 108-73-6D, Phloroglucinol, reaction product with Bu carbonate 120-80-9D,  
 1,2-Benzenediol, reaction product with Bu carbonate 123-31-9D,  
 1,4-Benzenediol, reaction product with Bu carbonate 533-73-3D,  
 Hydroxyhydroquinone, reaction product with Bu carbonate 79808-66-5D,  
 Trihydroxybenzophenone, reaction product with Bu carbonate 126045-04-3D,  
 Tetrahydroxybenzophenone, reaction product with Bu carbonate  
 RL: USES (Uses)

(in photoresist compn.)

IT 87-66-1D, 1,2,3-Benzenetriol, reaction product with Bu carbonate  
34619-03-9D, Di-tert-butyl carbonate, reaction product with pyrogallol  
RL: TEM (Technical or engineered material use); USES (Uses)  
(photoresist compn. contg.)

IT 128087-36-5P 156424-33-8P 156424-34-9P 156428-48-7P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(prepn. and reaction of, for photoresist compn.)

L13 ANSWER 27 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1994:204337 CAPLUS

DN 120:204337

ED Entered STN: 16 Apr 1994

TI New silicon-rich silylating reagents for dry-developed positive-tone deep-  
\*\*\*ultraviolet\*\*\* lithography

AU Wheeler, David R.; Hutton, Skip; Stein, Susan; Baiocchi, Frank; Cheng,  
May; Taylor, Gary

CS Dep. 1811, Sandia Natl. Lab., Albuquerque, NM, 87185, USA

SO Journal of Vacuum Science & Technology, B: Microelectronics and Nanometer  
Structures (1993), 11(6), 2789-93  
CODEN: JVTBD9; ISSN: 0734-211X

DT Journal

LA English

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 76

AB Disilanes are used as silylating reagents for near-surface \*\*\*imaging\*\*\*  
with deep \*\*\*UV\*\*\* (248 nm) light. A relatively thin \*\*\*imaging\*\*\*  
layer of a photo-crosslinking resist spun over a thicker layer of  
hard-baked resist which functions as a planarizing layer and  
antireflective coating. Photoinduced acid generation and subsequent  
heating cross-links exposed areas and renders them impermeable to an  
aminodisilane which reacts with the unexposed regions. Subsequent O2  
reactive-ion etching affords a pos.-tone \*\*\*image\*\*\* in the resist.  
The use of disilanes introduces a higher concn. of silicon into the  
polymer than is possible with silicon reagents that incorporate only one  
silicon atom per reactive site. The higher silicon content in the  
silylated polymer increases etching selectivity between exposed and  
unexposed regions and thereby increases the contrast. The authors have  
resolved high-aspect ratio, 0.25 .mu.m line and space \*\*\*patterns\*\*\*  
with 248 nm light in a stepper with a numerical aperture of 0.48.

ST silicon rich silylating reagent \*\*\*UV\*\*\* photolithog; disilane  
silylating reagent deep \*\*\*UV\*\*\* photolithog; bilayer photoresist  
disilane silylating agent lithog

IT Silanes  
RL: USES (Uses)  
(di-, as silylating reagents for dry-developed pos.-tone deep-  
\*\*\*UV\*\*\* lithog.)

IT Silylation  
(agents, silicon-rich, for dry-developed pos.-tone deep- \*\*\*UV\*\*\*  
lithog.)

IT Electric circuits  
(integrated, silicon-rich silylating reagents for dry-developed  
pos.-tone deep- \*\*\*UV\*\*\* lithog. in fabrication of)

IT Phenolic resins, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(novolak, photoresist compn. contg., improved resoln. using disilanes  
and bilayer resist scheme)

IT Phenolic resins, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(novolak, cresol-based, photoresist compn. contg., improved resoln.  
using disilanes and bilayer resist scheme)

IT Lithography  
(photo-, \*\*\*UV\*\*\*, submicron, silicon-rich silylating reagents for  
dry-developed pos.-tone)

IT Phenolic resins, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(pyrogallol-based, photoresist compn. contg., improved resoln. using  
disilanes and bilayer resist scheme)

IT Phenolic resins, uses  
RL: TEM (Technical or engineered material use); USES (Uses)

( \*\*\*resorcinol\*\*\* -based, photoresist compn. contg., improved  
 resoln. using disilanes and bilayer resist scheme)  
 IT 73928-57-1, HPR 204 137087-68-4, SPR 1811  
 RL: USES (Uses)  
 (bilayer resist scheme with lower layer from, silicon-rich silylating  
 reagents for improved performance)  
 IT 153859-76-8, XP 8844  
 RL: USES (Uses)  
 (bilayer resist scheme with photosensitive top layer from, silicon-rich  
 silylating reagents for improved performance)  
 IT 87-66-1D, Pyrogallol, phenolic resins 108-46-3D, 1,3-Benzenediol,  
 phenolic resins 9002-89-5, PVA 59269-51-1, Poly(vinylphenol)  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (photoresist compn. contg., improved resoln. using disilanes and  
 bilayer resist scheme)  
 IT 2083-91-2, Dimethylaminotrimethylsilane 2875-98-1 3704-46-9,  
 Dodecamethylpentasilane 4774-84-9 22705-32-4, N,N-  
 Dimethylaminodimethylsilane 26798-98-1, N,N-  
 Dimethylaminopentamethyldisilane 28883-63-8, Poly(dimethylsilane)  
 38041-04-2, Octamethylcyclotetrasilane 72059-93-9 78635-80-0,  
 N-Methylaminopentamethyldisilane  
 RL: USES (Uses)  
 (silylating reagent for dry-developed pos.-tone deep- \*\*\*UV\*\*\*  
 lithog.)

L13 ANSWER 28 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1994:65827 CAPLUS  
 DN 120:65827  
 ED Entered STN: 05 Feb 1994  
 TI Electrostatographic \*\*\*image\*\*\* development  
 IN Yasuda, Shinichiro; Kawabe, Kunyasu; Sasaki, Mitsuhiro  
 PA Kao Corp, Japan  
 SO Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF

DT Patent  
 LA Japanese  
 IC ICM G03G015-16  
 ICS G03G009-08; G03G015-20  
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)

FAN.CNT 1  

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05046036	A2	19930226	JP 1991-224715	19910809
PRAI	JP 1991-224715		19910809		

CLASS  

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 05046036	ICM	G03G015-16
	ICS	G03G009-08; G03G015-20
	IPCI	G03G0015-16 [ICM,5]; G03G0009-08 [ICS,5]; G03G0015-20 [ICS,5]

AB The title electrostatog \*\*\*imaging\*\*\* method comprises as  
 electrostatic latent \*\*\*image\*\*\* -forming step in which an  
 electrostatic \*\*\*image\*\*\* is formed on an insulative material, a  
 development step in which a toner \*\*\*image\*\*\* is produced from the  
 electrostatic latent \*\*\*image\*\*\*, a fixing step in which the toner  
 \*\*\*image\*\*\* is fixed on a receptor sheet, the above insulative material  
 being an endless belt and the toner fixing being effected by preheating  
 the toner on the insulative belt than pressing onto a receptor sheet. The  
 toner is a heat-dissociable capsule toner and the preheating of the toner  
 is effected at 40-120.degree.. The process is useful in \*\*\*laser\*\*\*  
 printers and facsimiles using plain paper.

ST electrostatog development plain paper; \*\*\*laser\*\*\* printer  
 electrostatog development; capsule toner polyurethane shell

IT Urethane polymers, uses  
 RL: USES (Uses)  
 (capsule toner shell materials of, heat-dissociable)

IT Electrophotographic developers  
 (toners, capsule, heat-dissociable shell-using)

IT 30022-79-8, 4,4'-Diphenylmethanediisocyanate- \*\*\*resorcinol\*\*\*  
 copolymer

RL: USES (Uses)  
(capsule toner shells contg. heat-dissociable)

L13 ANSWER 29 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1993:157679 CAPLUS  
DN 118:157679  
ED Entered STN: 13 Apr 1993  
TI Silver halide print-out material suitable as mounting aid and position  
proof  
IN Graindourze, Marc Bernard; Deploige, Luc Camille  
PA Agfa-Gevaert N. V., Belg.  
SO Eur. Pat. Appl., 15 pp.  
CODEN: EPXXDW  
DT Patent  
LA English  
IC ICM G03C001-49  
ICS G03F003-10; G03F009-00  
CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 509148	A1	19921021	EP 1991-200873	19910415
	EP 509148	B1	19960717		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	JP 05197065	A2	19930806	JP 1992-118155	19920410
PRAI	EP 1991-200873	A	19910415		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 509148	ICM	G03C001-49
	ICS	G03F003-10; G03F009-00
	IPCI	G03C0001-49 [ICM,5]; G03F0003-10 [ICS,5]; G03F0009-00 [ICS,5]
	IPCR	G03C0001-005 [I,C]; G03C0001-49 [I,A]; G03F0003-10 [I,A]; G03F0003-10 [I,C]; G03F0009-00 [I,A]; G03F0009-00 [I,C]
	ECLA	G03C001/49; G03F003/10S; G03F009/00
JP 05197065	IPCI	G03C0001-49 [ICM,5]; G03C0001-035 [ICS,5]; G03C0001-06 [ICS,5]; G03C0001-42 [ICS,5]; G03C0001-805 [ICS,5]; G03C0001-815 [ICS,5]; G03C0005-08 [ICS,5]

AB A photog. silver halide print-out material is disclosed comprising: (1) an opaque or a transparent support and (2) .gtoreq.1 Ag halide emulsion layer coated at a Ag coverage, expressed as AgNO<sub>3</sub>, between 0.25 and 2.0/m<sup>2</sup>, and contg. a halogen acceptor in a concn. of .gtoreq.1 .times. 10<sup>-3</sup> mol/mol of Ag halide, the emulsion having: (a) a chloride content of .gtoreq.90% of the total halide content and (b) an av. grain size of <0.3 .mu.m. The emulsion further can contain internal electron traps, preferably in the form of a metal dopant. The material further can contain a filter dye, present in the emulsion or another hydrophilic colloid layer and absorbing light in the visual part of the spectral region or a compd. absorbing in the near \*\*\*UV\*\*\* region. After exposure by \*\*\*UV\*\*\* radiation the print-out \*\*\*image\*\*\* can be used as position proof or assembly aid in pre-press photog. art.

ST graphic art photog emulsion proof

IT Photographic emulsions

(for graphic art proofs, halogen acceptors in)

IT 123-31-9, Hydroquinone, uses 7440-16-6, Rhodium, uses 7440-50-8, Copper, uses

RL: USES (Uses)

(dopant, in photog. emulsions)

IT 139138-91-3

RL: USES (Uses)

(halogen acceptor, in photog. emulsion)

IT 108-46-3, \*\*\*Resorcinol\*\*\*, uses 142-46-1, 1,2-Hydrazinedicarbothioamide

RL: USES (Uses)

(photog. emulsions contg.)

L13 ANSWER 30 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1991:418628 CAPLUS  
DN 115:18628

ED Entered STN: 12 Jul 1991  
 TI Positive-working photoresist compositions  
 IN Nakano, Yoshitomo; Kada, Masumi; Ito, Satoshi  
 PA Mitsubishi Petrochemical Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G03F007-023  
 ICS H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 03001143	A2	19910107	JP 1989-134597	19890530
PRAI	JP 1989-134597		19890530		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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JP 03001143	ICM	G03F007-023
	ICS	H01L021-027
	IPCI	G03F0007-023 [ICM,5]; H01L0021-027 [ICS,5]

GI

/ Structure 33 in file .gra /

AB The compns. contain condensates of amino compds. I, phenols II (R = C1-9-alkyl, halo; q = 0-2; p = 1-2), and alkylaldehyde and/or arylaldehyde. These compns. provide high resoln., and high sharpness. Thus, amino-contg. phenolic resin was obtained by condensation of PhNH2 2, m-cresol 5, p-cresol 4, and HCHO 7 mols. A compn. contg. 10 g of the resin and 3.5 g reaction product of naphthoquinone-(1,2)-diazide-(2)-5-sulfonyl chloride with 2,3,4-trihydroxy benzophenone was applied on Si wafer. Drying, prebaking, patternwise exposure to \*\*\*UV\*\*\*, and development of the wafer gave well-defined \*\*\*pattern\*\*\* that revealed large increase of development rate with increase of exposure.

ST phenolic resin amino contg photoresist  
 IT Phenolic resins, uses and miscellaneous  
 RL: USES (Uses)  
     (amino-contg., pos.-working photoresists contg., for sharp  
       \*\*\*pattern\*\*\* )

IT Resists  
     (photo-, pos.-working, amino-contg. phenolic resins contained in, for sharpness)

IT 38806-73-4, Aniline-3,5-dimethylphenol-formaldehyde copolymer  
 134437-53-9, Aniline-m-cresol-p-cresol-formaldehyde copolymer  
 134437-54-0, m-Cresol-p-cresol-formaldehyde-m-toluidine copolymer  
 134437-55-1, m-Cresol-formaldehyde- \*\*\*resorcinol\*\*\* -m-toluidine copolymer  
 134437-56-2, Aniline-m-cresol-p-cresol-salicylaldehyde copolymer  
 RL: USES (Uses)  
     (pos.-working photoresists contg., for sharp \*\*\*pattern\*\*\* )

L13 ANSWER 31 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1991:256981 CAPLUS  
 DN 114:256981  
 ED Entered STN: 28 Jun 1991  
 TI Positive-working photoresist compositions  
 IN Nakano, Yoshitomo; Kada, Masumi; Ito, Satoshi  
 PA Mitsubishi Petrochemical Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G03F007-022  
 ICS H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 03001142	A2	19910107	JP 1989-134598	19890530
PRAI	JP 1989-134598		19890530		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 03001142	ICM	G03F007-022
	ICS	H01L021-027
	IPCI	G03F0007-022 [ICM,5]; H01L0021-027 [ICS,5]

GI

/ Structure 34 in file .gra /

AB The compns. contain condensates of hydroxyarom. amino compds. I, phenols II (R = C1-9 alkyl, halo; q = 0-2; p = 1-2), and alkylaldehyde and/or arylaldehyde. These compns. provide high resoln. and high sharpness. Thus, amino-contg. phenolic resin was obtained by condensation of m-aminophenol 2, m-cresol 4, p-cresol 4, and HCHO 7 mol. A compn. contg. 10 g of the resin and 3.5 g reaction product of naphthoquinone-(1,2)-diazide-(2)-5-sulfonyl chloride with 2,3,4-trihydroxybenzophenone was applied to a Si wafer. Drying, prebaking, patternwise exposure to \*\*\*UV\*\*\*, and development of the wafer gave a well-defined \*\*\*pattern\*\*\* that revealed large increase of development rate with increase of exposure.

ST phenolic resin amino contg photoresist

IT Phenolic resins, uses and miscellaneous

RL: USES (Uses)

(amino-contg., pos.-working photoresists contg., for sharp

\*\*\*pattern\*\*\* )

IT Resists

(photo-, pos.-working, amino-contg. phenolic resins contained in, for sharpness)

IT 134118-52-8, m-Aminophenol-m-cresol-p-cresol-formaldehyde copolymer  
 134118-53-9, m-Aminophenol-m-cresol-formaldehyde-3,5-xilenol copolymer  
 134118-54-0, p-Aminophenol-m-cresol-formaldehyde- \*\*\*resorcinol\*\*\*  
 copolymer 134118-55-1, m-Aminophenol-m-cresol-p-cresol-salicylaldehyde  
 copolymer

RL: USES (Uses)

(pos.-working photoresists contg., for sharp \*\*\*pattern\*\*\* )

L13 ANSWER 32 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1989:605483 CAPLUS

DN 111:205483

ED Entered STN: 25 Nov 1989

TI Positive-type photoresist compositions

IN Yajima, Mikio; Kawada, Masaji; Kamiya, Shigemitsu

PA Nippon Zeon Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03C001-72

ICS G03F007-08

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01020540	A2	19890124	JP 1987-177783	19870716
	US 5043243	A	19910827	US 1989-437929	19891117
PRAI	JP 1987-177783		19870716		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 01020540	ICM	G03C001-72
	ICS	G03F007-08
	IPCI	G03C0001-72 [ICM,4]; G03F0007-08 [ICS,4]

US 5043243 ECLA G03F0007/022M  
 IPCI G03C0001-52 [ICM,5]; G03C0005-00 [ICS,5]  
 IPCR G03F0007-022 [I,A]; G03F0007-022 [I,C]; G03F0007-09  
 [I,A]; G03F0007-09 [I,C]  
 NCL 430/191.000; 430/165.000; 430/192.000; 430/193.000;  
 430/326.000

AB The alkali-developable title compns. capable of forming fine  
 \*\*\*patterns\*\*\* even on uneven surfaces contain an alkali-sol. resin and  
 a quinonediazide compd. as essential components and uses a 350-450 nm  
 \*\*\*UV\*\*\* source, wherein the resin has absorbance (10 ppm soln. in  
 2-ethoxyethyl acetate) (0.5-10) .times. 10-2/cm in the above wavelength  
 range, does not fade in the wavelength range, and has no.-av. mol. wt.  
 >500.

ST alkali developable resin pos photoresist  
 IT Phenolic resins, uses and miscellaneous  
 RL: USES (Uses)  
 (alkali-developable pos.-working photoresists)  
 IT Resists  
 (photo-, pos.-working, alkali-developable phenolic resins)  
 IT 68510-93-0  
 RL: USES (Uses)  
 (photoresists, for phenolic resin photoresists)  
 IT 27029-76-1, m-Cresol-p-cresol-formaldehyde copolymer 123502-52-3  
 123502-53-4, \*\*\*Resorcinol\*\*\* -formaldehyde-o-ethoxybenzenediazonium  
 chloride copolymer 123502-54-5  
 RL: USES (Uses)  
 (photoresists, pos.-working, alkali-developable)

L13 ANSWER 33 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1989:144988 CAPLUS  
 DN 110:144988  
 ED Entered STN: 15 Apr 1989  
 TI \*\*\*UV\*\*\* -sensitive, negative-working photoresists containing azide or  
 bisazide and partially O-silylated binder  
 IN Bendig, Juergen; Buchwitz, Wolfgang; Helm, Siegrun; Sauer, Erika  
 PA Humboldt-Universitaet zu Berlin, Ger. Dem. Rep.  
 SO Ger. (East), 6 pp.  
 CODEN: GEXXA8  
 DT Patent  
 LA German  
 IC ICM G03C001-70  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DD 258296	A1	19880713	DD 1987-300412	19870303
PRAI DD 1987-300412		19870303		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
DD 258296	ICM	G03C001-70
	IPCI	G03C0001-70 [ICM,4]

GI

/ Structure 35 in file .gra /

AB \*\*\*UV\*\*\* -sensitive, neg.-working photoresists having a high  
 sensitivity and a high resolu. in the sub-.mu.m region, along with  
 increased etch resistance to O2 plasma, contain an azide of the formula I  
 or II (R = H, alkyl, MeO, halogen, NO2, CN, or dialkylamino; m = 1 or 2)  
 or a bisazide of the formula III (X = SO2 or IV), a partially O-silylated  
 binder, and a suitable solvent. Thus, a support (Si/SiO2) was spin-coated  
 with a soln. contg. p-azidostyryl p'-methoxyphenyl ketone, a  
 trimethylsilylmethoxylated o-cresol- \*\*\*resorcinol\*\*\* -HCHO copolymer,  
 and cyclohexanone, dried to give a layer thickness of 1.2 .mu.m, exposed  
 through a quartz \*\*\*mask\*\*\*, and developed with an aq. KOH soln. to  
 give an \*\*\*image\*\*\* with excellent resistance to O2 plasma etching.



ST neg photoresist silylated binder azide; bisazide neg photoresist silylated binder

IT Azides  
RL: USES (Uses)  
(photoresists contg. silylated phenolic resin binder and, neg.-working)

IT Phenolic resins, compounds  
RL: USES (Uses)  
(novolak, silylated, neg.-working photoresists contg. azide or bisazide and)

IT Resists  
(photo-, neg.-working, contg. azide or bisazide and partially O-silylated binder)

IT 59789-74-1D, o-Cresol-formaldehyde- \*\*\*resorcinol\*\*\* copolymer, trimethylsilylmethoxylated 119727-47-8 119727-48-9D, trimethylsilylmethoxylated 119727-49-0D, trimethylsilylated 119727-50-3D, trimethylsilylated 119727-52-5D, triethylsilylmethoxylated 119727-53-6D, triethylsilylmethoxylated 119727-55-8  
RL: USES (Uses)  
(neg.-working photoresists contg. azide or bisazide and)

IT 5284-79-7, 2,6-Bis(p-azidobenzylidene)-4-methylcyclohexanone 7300-27-8, 4,4'-Diazidodiphenyl sulfone 27934-58-3 27934-69-6 41657-70-9 41657-71-0 75742-13-1, 3,3'-Diazidodiphenyl sulfone 95690-43-0 104458-83-5 119713-05-2 119713-06-3 119713-07-4 119713-08-5 119713-09-6 119713-10-9  
RL: USES (Uses)  
(photoresist compns. contg. O-silylated phenolic resin binder and, neg.-working)

L13 ANSWER 34 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1988:140771 CAPLUS

DN 108:140771

ED Entered STN: 15 Apr 1988

TI Positive radiation-sensitive resist containing novolak resin and quinonediazide compound

IN Hosaka, Yoshihiro; Nozue, Ikuo; Takatori, Masashige; Harita, Yoshiyuki; Honda, Kiyoshi

PA Japan Synthetic Rubber Co., Ltd., Japan

SO Eur. Pat. Appl., 23 pp.  
CODEN: EPXXDW

DT Patent

LA English

IC ICM G03F007-08

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 227487	A2	19870701	EP 1986-310187	19861229
	EP 227487	A3	19871028		
	EP 227487	B1	19920715		
	R: BE, DE, FR, GB				
	JP 62153950	A2	19870708	JP 1985-296653	19851227
	JP 62173458	A2	19870730	JP 1986-15333	19860127
	JP 06054385	B4	19940720		
	US 5087548	A	19920211	US 1988-282958	19881205
PRAI	JP 1985-296653	A	19851227		
	JP 1986-15333	A	19860127		
	US 1986-946056	B1	19861224		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 227487	ICM	G03F007-08
	IPCI	G03F0007-08 [ICM,4]
	IPCR	G03F0007-023 [I,A]; G03F0007-023 [I,C]
JP 62153950	IPCI	G03C0001-72 [ICM,4]; C08K0005-32 [ICS,4]; C08L0061-06 [ICS,4]; G03F0007-08 [ICS,4]
JP 62173458	IPCI	G03C0001-72 [ICM,4]; C08K0005-28 [ICS,4]; C08L0061-04 [ICS,4]; G03F0007-08 [ICS,4]
	ECLA	G03F007/023P2
US 5087548	IPCI	G03E0007-022
	IPCR	G03F0007-023 [I,A]; G03F0007-023 [I,C]
	NCL	430/192.000; 430/193.000

/ Structure 36 in file .gra /

AB A pos.-working radiation-sensitive resist is comprised of a 1,2-quinonediazide compd. and an alkali-sol. novolak resin produced by polycondensing a carbonyl compd. With phenol derivs. represented by the formulas I and II (R, R1 = OH, H, alkyl, aryl, aralkyl, alkenyl, halogen, alkoxy, alkoxycarbonyl, aroxycarbonyl, alkanoyloxy, aroyloxy, acyl, CN, NO2; R2, R3, R4 = H, alkyl, aryl, aralkyl, alkenyl, halogen, alkoxy, alkoxycarbonyl, aroxycarbonyl, alkanoyloxy, aroyloxy, acyl, CN, NO2) in a molar ratio of I/II of 1/99 to 100/0. The resist is sensitive to \*\*\*UV\*\*\* radiations, x-rays, electron beams, mol. beams, .gamma.-rays, synchrotron radiations, and proton beams has excellent resoln., heat resistance and dry-etching resistance, and is esp. suitable for fabricating \*\*\*photomasks\*\*\* and integrated elec. circuits. Thus, \*\*\*resorcinol\*\*\*, acetaldehyde, and m-cresol were polycondensated in BuOH in the presence of oxalic acid to give an alkali-sol. novolak resin. The novolak resin and bis(2,4-dihydroxyphenyl)methane 1,2-naphthoquinonediazido-5-sulfonic acid tetraester were dissolved in Et cellosolve acetate, coated on a Si wafer having a Si oxide surface layer, dried, baked at 90.degree. to give a resist film, imagewise exposed to \*\*\*UV\*\*\* radiation, (center wavelength 436 nm) through a \*\*\*mask\*\*\*, and developed in an aq. tetramethylammonium hydroxide soln. to give a resist \*\*\*pattern\*\*\* having a resoln. of 0.8 .mu.m, a heat-resistance temp. of 160.degree., and an excellent resistance to dry etching.

ST pos resist quinonediazide novolak resin; \*\*\*photomask\*\*\* quinonediazide novolak resin resist; elec circuit pos resist quinonediazide

IT \*\*\*Photomasks\*\*\*  
(pos.-working photoresists contg. quinonediazide compd. and novolak resin for fabrication of)

IT Resists  
(electron-beam, pos.-working, contg. quinonediazide compd. and novolak resin)

IT Electric circuits  
(integrated, pos.-working photoresists contg. quinonediazide compd. and novolak resin for fabrication of)

IT Phenolic resins, uses and miscellaneous  
RL: PREP (Preparation)  
(novolak, pos.-working photoresists contg. quinonediazide compd. and, for prepn. of integrated circuits and \*\*\*photomasks\*\*\* )

IT Resists  
(photo-, pos.-working, contg. quinonediazide compd. and novolak resin)

IT Resists  
(radiation-sensitive, pos.-working, contg. quinonediazide compd. and novolak resin)

IT 75-59-2, Tetramethylammonium hydroxide  
RL: USES (Uses)  
(developing solns. contg., for pos.-working photoresists contg. quinonediazide compd. and novolak resin for fabrication of integrated circuits and \*\*\*photomasks\*\*\* )

IT 100417-73-0 112284-38-5 112284-39-6 112284-40-9 112284-41-0  
112284-42-1 112284-44-3 112284-45-4 113656-92-1 113656-93-2  
RL: USES (Uses)  
(pos.-working photoresists contg. novolak resin and, for fabrication of integrated circuits and \*\*\*photomasks\*\*\* )

IT 25053-98-9 27029-76-1 28410-56-2 38333-84-5 94289-75-5  
104955-68-2 105489-72-3 113578-36-2 113578-37-3 113578-38-4  
113578-39-5 113578-40-8 113578-41-9 113578-42-0 113578-43-1  
113578-44-2 113578-45-3 113578-46-4 113578-47-5 113578-48-6  
113578-49-7 113596-44-4  
RL: USES (Uses)  
(pos.-working photoresists contg. quinonediazide compd. and, for fabrication of integrated circuits and \*\*\*photomasks\*\*\* )

TI Radiation-curable inks for printed circuit boards  
 IN Otaka, Hisao; Sugano, Takashi; Ishii, Hiroyuki; Nonomura, Tsutomu  
 PA Toyo Ink Mfg. Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C09D011-02  
 ICS C08F299-02  
 ICA G03C001-68  
 CC 42-12 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 76

FAN.CNT 1					
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 61223073	A2	19861003	JP 1985-63769	19850329
PRAI	JP 1985-63769		19850329		

CLASS			
PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES	
-----	----	-----	
JP 61223073	ICM	C09D011-02	
	ICS	C08F299-02	
	ICA	G03C001-68	
	IPCI	C09D0011-02 [ICM,4]; C08F0299-02 [ICS,4]; G03C0001-68 [ICA,4]	

AB A radiation-curable resin compn., useful as a dry offset-printing ink giving a \*\*\*pattern\*\*\* with good reproducibility and good resistance to an etching soln. in the manuf. of a printed circuit board, comprises a film-forming resin contg. carboxy or carboxylic anhydride groups, a phenol or bisphenol adduct with ethylene oxide treated with (meth)acrylic acid, and, optionally, a radical polymn. initiator. Thus, a compn. comprising an ester of a 1:1 (molar) styrene-maleic anhydride copolymer and hydroxyethyl acrylate (acid value 150) 50, a \*\*\*resorcinol\*\*\* -ethylene oxide adduct (1.3:1 ratio) treated with acrylic acid (acid value 4.0) 18, a radical polymn. initiator 10, and pigments 22 parts was printed on a Cu foil laminate by dry offset printing with min. \*\*\*pattern\*\*\* width 50 .mu. and \*\*\*UV\*\*\* -cured. The laminate was etched with aq. CuCl2 soln. and treated with 3% aq. NaOH soln. to form a \*\*\*pattern\*\*\* with good reproducibility.

ST maleic copolymer ink resist; resist ink photocuring; styrene copolymer ink resist; hydroxyethyl acrylate ink resist; \*\*\*resorcinol\*\*\* ethoxylate acrylate resist; acrylate photocuring ink resist; circuit board resist ink; photocuring resist ink; elec circuit resist ink

IT Rosin  
 RL: USES (Uses)  
 (maleated, acrylates, in radiation-curable resist on circuit board)

IT Electric circuits  
 (printed, ink resists for manuf. of, radiation-curable)

IT Crosslinking  
 Polymerization  
 (radiochem., of ink resist on circuit board)

IT 108-31-6D, Maleic anhydride, reaction products with rosin, acrylates 818-61-1D, esters with maleated rosin 15625-89-5, Trimethylolpropane triacrylate 51204-92-3 56361-55-8 63213-21-8  
 RL: USES (Uses)  
 (ink contg., as radiation-curable resist, for circuit board)

L13 ANSWER 36 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1986:635954 CAPLUS  
 DN 105:235954  
 ED Entered STN: 26 Dec 1986  
 TI Photofixable diazo thermal recording materials  
 IN Yabuta, Kenji; Morishita, Sadao  
 PA Mitsubishi Paper Mills, Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM B41M005-18  
 ICS G03C001-52  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 61098587	A2	19860516	JP 1984-220143	19841019
	JP 04044597	B4	19920722		
PRAI	JP 1984-220143		19841019		

## CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 61098587	ICM	B41M005-18
	ICS	G03C001-52
	IPCI	B41M0005-18 [ICM,4]; G03C0001-52 [ICS,4]

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB In the title material providing a stable black \*\*\*image\*\*\*, having a substrate and a light- and heat-sensitive layer mainly composed of diazonium salts, couplers, and org. bases, the couplers consist of 1 compd. having the formula I and .gtoreq.1 compd. having the formula II, III, IV, V (R, R4 = H; 1 of R, R4 = Me; R1-R3 = H, alkyl, alkoxy, PhO, cycloalkyl, aralkyl; R5, R6 = H, alkyl, alkoxy; Z = C1-6 alkylene, p-phenylenebismethylene; Z1 = CH2, S, SO; arom. nuclei or III may be substituted by alkyl, alkoxy, or halo; R7, R8 = H, halo, alkanolamide; R9, R10; H, C1-6 alkyl; and R9 R10 together may form a cycloalkyl group). The org. bases typically are guanidine derivs. (R11R12N)(R13R14N)C: NR15, Z2[N:C(R11R12N)(R13R14N)]2 (R11-R15 = H, C1.ltoreq.18 alkyl, cycloalkyl, aryl, aralkyl, NH2, alkylamino, acylamino, carbamoylamino, heterocycle; Z2 = lower alkylene, phenylene, naphthylene, (p-C6H4)Z3(p-C6H4); arom. rings in Z2 may be substituted by lower alkyl, alkoxy, NO2, acylamino, alkylamino, halo; Z3 = lower alkylene, SO2, S2, S, O, NH, single bond). Thus, 3 dispersion were prepd., resp. contg. (A) 2-hydroxy-2'-methyl-3-naphthanilide 5, \*\*\*resorcinol\*\*\* disulfide 5, 10% poly(vinyl alc.) 5, and H2O 15 g, (B) VI 55, stearamide 45 10% Me cellulose 50, and H2O 150 g, and (C) VII 10, 10% poly(vinyl alc.) 5, and H2O 15 g. The coating compn., contg. A 5, B 100, C 10, 10% poly(vinyl alc.) 200, H2O 200, citric acid 2.5, 2,5-diethoxy-4-morpholinobenzenediazonium BF4 2, and H2O 10 parts, was applied to the substrate (8.5 g/m2) to obtain a material. The material was then imaged by a 150.degree. heating block (5 s) and exposed to \*\*\*UV\*\*\* light for fixing. The d. of the black \*\*\*image\*\*\* was 1.20, of which 89% remained after a 72 h in exposure to a Xe lamp. A control material prepd. without the addn. of the dispersion C showed a d. of 1.21 but only 53% remained after the exposure test.

ST diazo recording material photofixable coupler; copy diazo \*\*\*image\*\*\* stabilizer bisphenol; guanidine deriv diazo recording material; thermal recording material diazo photofixable; hydroxynaphthanilide deriv coupler thermal recording; naphthanilide hydroxy deriv coupler recording

IT Recording materials  
(thermal, photofixable diazo, contg. hydroxynaphthamides deriv. coupler and bisphenol derivs. stabilizer)

IT 4979-72-0  
RL: USES (Uses)  
(thermal recording materials contg. bisphenol deriv. stabilizers and hydroxynaphthamide deriv. coupler and, photofixable)

IT 135-61-5 6358-02-7 60453-85-2  
RL: USES (Uses)  
(thermal recording materials contg. diazo compd. and bisphenol derivs. stabilizer and coupler from, photofixable)

IT 80-05-7, uses and miscellaneous 124-26-5  
RL: USES (Uses)  
(thermal recording materials contg. diazo compd. and hydroxynaphthamide deriv. coupler and bisphenol deriv. stabilizer and, photofixable)

IT 77-40-7 97-29-0 6626-15-9 61166-00-5  
RL: USES (Uses)  
(thermal recording materials contg. diazo compd. and hydroxynaphthamide deriv. coupler and stabilizer from)

DN 105:200590  
 ED Entered STN: 28 Nov 1986  
 TI Recording material  
 IN Satomura, Masato; Iwakura, Ken; Igarashi, Akira  
 PA Fuji Photo Film Co., Ltd. , Japan  
 SO Ger. Offen., 25 pp.  
 CODEN: GWXXBX  
 DT Patent  
 LA German  
 IC ICM B41M005-12  
 ICS C09B011-04  
 CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 41  
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3529796	A1	19860522	DE 1985-3529796	19850820
	JP 61051381	A2	19860313	JP 1984-173591	19840821
	JP 61280457	A2	19861211	JP 1985-123167	19850606
PRAI	JP 1984-173591	A	19840821		
	JP 1985-123167	A	19850606		

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
DE 3529796	ICM	B41M005-12
	ICS	C09B011-04
	IPCI	B41M0005-12 [ICM,4]; C09B0011-04 [ICS,4]
	IPCR	B41M0005-132 [I,C]; B41M0005-145 [I,A]; B41M0005-30 [I,C]; B41M0005-327 [I,A]; C07D0493-00 [I,C]; C07D0493-10 [I,A]
JP 61051381	IPCI	B41M0005-12 [ICM,4]; B41M0005-18 [ICS,4]; B41M0005-22 [ICS,4]
JP 61280457	IPCI	C07C0101-78 [ICM,4]
GI		

/ Structure 37 in file .gra /

AB Pressure-sensitive and thermal recording materials having improved color developability and developed color \*\*\*image\*\*\* stability contain a fluoran deriv. I (R = aryl; R1 = C10-18 alkyl, R2 = C.1toreq.10 alkyl; R3 = H, halogen, C1-6 alkyl, C1-6 alkoxy, C7-12 aralkyl, C6-9 aryl; R4 = H, Cl, or C1-4 alkyl) and an org. or inorg. acid which develops a color on contact with the fluoran deriv. Thus, a mixt. contg. a ball-milled dispersion (particle size 1.6 .mu.m) of 2-anilino-3-phenyl-6-N-dodecyl-N-ethylaminofluoran 5 g and a 5% aq. soln. of poly(vinyl alc.), a ball-milled dispersion (particle size 1.5 .mu.m) of Bisphenol A 10, .beta.-naphthol benzyl ether 10, kaolin 20 g, and a 5% aq. soln. poly(vinyl alc.), a 50% dispersion of a paraffin wax emulsion 5, and a stearic acid anisidide dispersion 8 g was coated on a paper support at 5 g/m2, dried, and recorded on at 35 mJ/cm2 to give a color d. of 1.03. After exposure to light from a \*\*\*UV\*\*\* lamp for 1 h, the d. was essentially unaltered.

ST fluoran deriv color former recording; copying paper pressure fluoran deriv; thermal recording fluoran deriv

IT Copying paper  
 (pressure-sensitive, fluoran deriv. color formers for)

IT Recording materials  
 (thermal, fluoran deriv. color formers for)

IT 105176-19-0P 105176-20-3P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and cyclization of)

IT 104583-78-0P  
 RL: PREP (Preparation)  
 (prepn. and pressure-sensitive copying and thermal recording applications of; as color former)

IT 63966-21-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(prepn. and reaction of, with phthalic anhydride)  
IT 104583-75-7  
RL: USES (Uses)  
(pressure-sensitive copying paper contg. color former from)  
IT 108-46-3, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with octadecylmethylamine)  
IT 85-44-9  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with octadecylmethylaminophenol)  
IT 105191-74-0  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with phthalic anhydride)  
IT 2439-55-6  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with \*\*\*resorcinol\*\*\*)  
IT 104583-76-8 104583-77-9  
RL: USES (Uses)  
(thermal recording material contg. color former from)

L13 ANSWER 38 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1986:177800 CAPLUS

DN 104:177800

ED Entered STN: 17 May 1986

TI Photosensitive material employing an encapsulated radiation-sensitive composition

IN Sanders, Frederick W.

PA Mead Corp., USA

SO U.S., 12 pp.

CODEN: USXXAM

DT Patent

LA English

IC ICM G03C001-40

ICS G03C001-00

INCL 430138000

CC 74-10 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4562137	A	19851231	US 1982-454396	19821230
PRAI	US 1982-454396		19821230		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 4562137	ICM	G03C001-40
	ICS	G03C001-00
	INCL	430138000
	IPCI	G03C0001-40 [ICM,4]; G03C0001-00 [ICS,4]
	IPCR	G03F0007-00 [I,A]; G03F0007-00 [I,C]
	NCL	430/138.000; 430/211.000

AB A photosensitive material is described which is useful for copying  
\*\*\*images\*\*\* from microfilm, a recorder-printer, or a cathode-ray tube.  
The material contains capsules contg. a radiation-sensitive compn. in an  
intermol. phase. Exposure produces a change in the viscosity of the  
radiation-sensitive compn. within the capsules and controls which capsules  
rupture and release the internal phase. The imagewise-released internal  
phase participates in subsequent interactions which result in the  
\*\*\*image\*\*\*. Thus, a paper support was coated with a layer of urea-  
\*\*\*resorcinol\*\*\*-HCOH polymer capsules contg. trimethylpropane  
triacrylate 50, 50% Copikem X in di-Bu succinate 6, benzophenone 2.2, and  
Michler's ketone 0.28 g, imagewise \*\*\*UV\*\*\*-exposed, and passed  
through a pressure nip in face-to-face contact with an acid clay (Silton  
F-150) developer sheet to provide a good quality \*\*\*image\*\*\*. The  
sensitivity of the material (log E) was 3 at 380 nm.  
ST photosensitive encapsulated compn \*\*\*imaging\*\*\* copying;  
photoduplication pressure sensitive encapsulated compn; photoimaging  
pressure sensitive copying compn  
IT Photoimaging compositions and processes  
(pressure-sensitive material contg. encapsulated photosensitive compn.)

as)

IT Photoduplication  
(pressure-sensitive material contg. encapsulated photosensitive compn. for)

IT Polyphosphoric acids  
RL: USES (Uses)  
(sodium salts, developer layer contg. acid clay and, for copying- \*\*\*imaging\*\*\* material contg. encapsulated photosensitive compn.)

IT Clays, uses and miscellaneous  
RL: USES (Uses)  
(acidic, developer layer contg., for copying- \*\*\*imaging\*\*\* material contg. encapsulated photosensitive compn.)

IT Copying paper  
(pressure-sensitive, contg. encapsulated photosensitive compn.)

IT 1343-98-2 1344-09-8 2235-43-0 3486-35-9 9003-55-8 9005-25-8D, acrylated 10124-56-8 13463-67-7, uses and miscellaneous 37199-81-8 95917-79-6 95918-12-0  
RL: USES (Uses)  
(developer layer contg. acid clay and, for copying- \*\*\*imaging\*\*\* material contg. encapsulated photosensitive compn.)

IT 34903-84-9  
RL: USES (Uses)  
(microcapsules from, contg. photosensitive materials, for pressure-sensitive copying and \*\*\*imaging\*\*\* )

IT 90-94-8 119-61-9, uses and miscellaneous 141-03-7 15625-89-5  
RL: USES (Uses)  
(photosensitive encapsulated compn. contg. color precursor and, for copying and \*\*\*imaging\*\*\* applications)

IT 80-62-6 3524-62-7 5495-84-1 10287-53-3 24650-42-8 24928-72-1 29512-49-0 50292-91-6  
RL: USES (Uses)  
(photosensitive microencapsulated compn. contg. dye and, for \*\*\*imaging\*\*\* and copying applications)

IT 81-88-9 89591-42-4  
RL: USES (Uses)  
(photosensitive microencapsulated compn. contg., for \*\*\*imaging\*\*\* and copying applications)

L13 ANSWER 39 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1986:139371 CAPLUS

DN 104:139371

ED Entered STN: 19 Apr 1986

TI Photofixable diazo material providing stable \*\*\*image\*\*\*

IN Yabuta, Kenji; Morishita, Sadao

PA Mitsubishi Paper Mills, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B41M005-18

ICA G03C001-58

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 60172584	A2	19850906	JP 1984-28300	19840217
	JP 03024915	B4	19910404		
PRAI	JP 1984-28300		19840217		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 60172584	ICM	B41M005-18
	ICA	G03C001-58
	IPCI	B41M0005-18 [ICM,4]; G03C0001-58 [ICA,4]

GI

AB A photofixable diazo material that provides very stable \*\*\*images\*\*\* contains a diazonium salt, a coupler, and a heat-activated org. base color developer, and the coupler has the structure I or II (Z = CH<sub>2</sub>, S, SO; the arom. nuclei may have an alkyl, alkoxy, or halogen substituent; R, R<sub>1</sub> = H, halogen, alkanolamido). An auxiliary coupler III (R<sub>2</sub>-R<sub>5</sub> = H, alkyl, alkoxy; Z<sub>1</sub> = C<sub>1</sub>-6 alkylene, p-phenylenebismethylene) may also be used. The org. base may be a guanidine deriv., such as R<sub>11</sub>N:C(NR<sub>7</sub>R<sub>8</sub>)(CR<sub>9</sub>R<sub>10</sub>) or Z<sub>2</sub>[N:C(CR<sub>7</sub>R<sub>8</sub>)(NR<sub>9</sub>R<sub>10</sub>)]<sub>2</sub> (R<sub>7</sub>-R<sub>11</sub> = H, C<sub><18</sub> alkyl, cycloalkyl, aryl, aralkyl, amino, alkylamino, acylamino, carbamoylamino, heterocyclyl; Z<sub>2</sub> = lower alkylene, phenylene, naphthylene, IV where Z<sub>3</sub> = lower alkylene, SO<sub>2</sub>, SS, S, O, NH, single bond; and the aryl groups above may be substituted by lower alkyl, alkoxy, NO<sub>2</sub>, acylamino, halogen). The material is photofixable, has high sensitivity and storage stability, and the \*\*\*images\*\*\* obtained are very stable to irradiation. Thus, 2 dispersions were prep'd., each contg. (A) \*\*\*resorcinol\*\*\* sulfide 10, 10% poly(vinyl alc.) 5, and H<sub>2</sub>O 15 and (B) V 55, stearamide 45, 10% methylcellulose 50, and H<sub>2</sub>O 150 g. A compn. contg. 5 parts of the dispersion A and 100 parts of B were dispersed with addn. of H<sub>2</sub>O 200, oxalic acid 2.5, 2,5-diethoxy-4-morpholinobenzenediazonium BF<sub>4</sub> 2, calcined kaolin 10, and 10% poly(vinyl alc.) 200 parts, and coated on a base to form a 9.5 g/m<sup>2</sup> layer. Heating the material at 150.degree. for 5 s and fixing by \*\*\*UV\*\*\* irradiation gave a black \*\*\*image\*\*\* having a d. of 1.26, which decreased by 20% in a fading test using Xe lamp irradiation. A control material using 2,4-dihydroxybenzoic acid in place of \*\*\*resorcinol\*\*\* sulfide gave an \*\*\*image\*\*\* d. of 1.30, which faded by 69% under the same conditions.

ST diazo thermal recording material photofixable; coupler diazo photofixable recording material; guanidine deriv diazo thermal recording

IT Diazo process  
(photofixable thermal recording material contg. diazo compd. and dihydric phenol deriv. coupler in relation to)

IT Kaolin, uses and miscellaneous  
RL: USES (Uses)  
(calcined, photofixable diazo compd.-based thermal recording material contg. dihydric phenol deriv. and, for stable \*\*\*images\*\*\* )

IT Phenols, uses and miscellaneous  
RL: USES (Uses)  
(dihydric, photofixable diazo compd.-based thermal recording materials contg., for stable \*\*\*images\*\*\* )

IT Recording materials  
(thermal, diazo compd.-based photofixable, contg. dihydric phenol deriv. couplers for stable \*\*\*images\*\*\* )

IT 97-29-0 24207-41-8 61166-00-5  
RL: USES (Uses)  
(photofixable diazo compd.-based thermal recording material contg. coupler of, for stable \*\*\*images\*\*\* )

IT 62-56-6, uses and miscellaneous 92-74-0 92-77-3 110-14-5 124-26-5  
144-62-7, uses and miscellaneous 4833-42-5 9002-89-5 9004-67-5  
99740-11-1  
RL: USES (Uses)  
(photofixable diazo compd.-based thermal recording materials contg. dihydric phenol deriv. coupler and, for stable \*\*\*images\*\*\* )

IT 101075-22-3  
RL: USES (Uses)  
(photofixable thermal recording materials contg. dihydric phenol deriv. coupler and, for stable \*\*\*images\*\*\* )

L13 ANSWER 40 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1985:430368 CAPLUS

DN 103:30368

ED Entered STN: 27 Jul 1985

TI Recording materials and processing method

PA Mitsubishi Paper Mills, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM B41M005-00

ICA B41J003-04

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)



FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 60008088	A2	19850116	JP 1983-115666	19830627
PRAI	JP 1983-115666		19830627		

## CLASS

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
	JP 60008088	ICM	B41M005-00
		ICA	B41J003-04
		IPCI	B41M0005-00 [ICM,4]; B41J0003-04 [ICA,4]
AB	Recording materials have .gtoreq.1 ink-receptive layer contg. a photocurable resin contained in microcapsules and a photoinitiator. After recording is done by ink jet, the microcapsules are crushed and the resin is photocured to make the material transparent or semitransparent. The resultant transparent recorded material is useful as a projection slide, copying intermediate and the like. Thus, a ***UV*** -curable compn. (Uvicoal; an oligomer having acryloyl groups) 200 parts was added to a mixt. contg. a 10% aq. soln. of ethylene-maleic anhydride copolymer 100, H2O 200, urea 10, and ***resorcinol*** 1 part, the pH adjusted to 3.5 with NaOH, and the material dispersed to make 15 .mu.m particles. A microcapsule dispersion was obtained by addn. of a 37% HCHO soln. 26 parts and reaction at 55.degree. for 3 h. The solids content was 40%. A compn. contg. poly(vinyl alc.) (PVA 117) 10, white carbon (Nipsil LP) 50, and the microscopic dispersion 200 parts was coated on a synthetic paper sheet to give a 20 g/m2 layer. The material was then used in ink-jet recording, a 50 kg/cm2 pressure applied to break the microcapsules, and the material cured by ***UV*** irradiation. The material showed improved color d., color reprodn., glossiness, and water resistance.		
ST	recording ink jet receptor photocurable; microcapsule photocurable resin recording receptor; ink jet recording transparent base		
IT	Polyesters, uses and miscellaneous RL: USES (Uses) (ink-jet recording materials contg. microencapsulated photocurable compn. and support from, for semitransparent or transparent ***images*** )		
IT	Recording materials (ink-jet, contg. microencapsulated photocurable compn. for semitransparent or transparent ***images*** )		
IT	7631-86-9, uses and miscellaneous RL: USES (Uses) (ink-jet recording materials contg. microencapsulated photocurable compn. and binder and, for semitransparent or transparent ***images*** )		
IT	9002-89-5 RL: USES (Uses) (ink-jet recording materials contg. microencapsulated photocurable compn. and binder of, for semitransparent or transparent ***images*** )		
IT	50-00-0, uses and miscellaneous 57-13-6, uses and miscellaneous 108-46-3, uses and miscellaneous 574-09-4 9003-08-1 9006-26-2 68993-81-7 RL: USES (Uses) (ink-jet recording materials with microencapsulated photocurable compns. contg., for semitransparent or transparent ***images*** )		

L13 ANSWER 41 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1985:212804 CAPLUS

DN 102:212804

ED Entered STN: 15 Jun 1985

TI Thermal development of photosensitive materials employing microencapsulated radiation sensitive compositions

IN Adair, Paul Clinton; McLain, Michael Kenneth

PA Mead Corp., USA

SO PCT Int. Appl., 30 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM G03C001-68

ICS G03C001-71

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 8500670	A1	19850214	WO 1984-US1188	19840723
	W: AU, BR				
	RW: AT, BE, CH, DE, FR, GB, LU, NL, SE				
	AU 8432166	A1	19850304	AU 1984-32166	19840723
	AU 578423	B2	19881027		
	EP 157783	A1	19851016	EP 1984-903021	19840723
	EP 157783	B1	19891220		
	R: BE, DE, FR, GB, SE				
	CA 1239826	A1	19880802	CA 1984-459682	19840725
	US 4663266	A	19870505	US 1984-683321	19841217
PRAI	US 1983-517115	A	19830725		
	WO 1984-US1188	A	19840723		

## CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 8500670	ICM	G03C001-68
	ICS	G03C001-71
	IPCI	G03C0001-68 [ICM,4]; G03C0001-71 [ICS,4]
	IPCR	B41M0005-28 [I,A]; B41M0005-28 [I,C]; G03F0007-00 [I,A]; G03F0007-00 [I,C]
AU 8432166	IPCI	G03C0001-68 [ICM,3]; G03C0001-71 [ICS,3]
EP 157783	IPCI	G03C0001-68 [ICM,4]; G03C0001-71 [ICS,4]
	IPCR	B41M0005-28 [I,A]; B41M0005-28 [I,C]; G03F0007-00 [I,A]; G03F0007-00 [I,C]
CA 1239826	IPCI	G03C0001-00 [ICM,4]
US 4663266	IPCI	G03G0009-16 [ICM,4]
	IPCR	B41M0005-28 [I,A]; B41M0005-28 [I,C]; G03F0007-00 [I,A]; G03F0007-00 [I,C]
	NCL	430/138.000; 503/200.000

AB An \*\*\*imaging\*\*\* material consists of a support and a layer of thermally rupturable microcapsules contg. a radiation sensitive compn. which undergoes a change in viscosity upon exposure to actinic radiation (\*\*\*UV\*\*\*, IR, visible, x-ray, ion-beam etc.) and a heat activatable material which generates a quantity of gas sufficient to rupture the microcapsules upon heating. Thus, a sheet of 80 lb Black and White Enamel Stock was coated with a soln. contg. 65 parts of a ground mixt. of 25% Tamol 731 240, dry HT clay 75, SD-74 Resin 1000, Calgon T 15, Dequest 20006 30 g and 25 parts of HT clay and 10 parts of Dow 501 Latex, overcoated with a coating contg. urea- \*\*\*resorcinol\*\*\* -HCOH copolymer capsules with photoactive internal phase contg. trimethylol propane triacrylate 50, Irgacure 651 12, Quantacure ITX 1, Copikem X (50% in di-Bu succinate) 6, azidocarbonamide 2 g, to give a self-contained \*\*\*imaging\*\*\* sheet, which was imagewise exposed for 16 s to \*\*\*UV\*\*\*, and heated (185-230.degree.) to give an \*\*\*image\*\*\* with Dmax = 0.95, Dmin = 0.46.

ST \*\*\*imaging\*\*\* microcapsulated radiation sensitive compn; thermal development \*\*\*image\*\*\* encapsulated compn; photoimaging encapsulated compn thermal development

IT Photoimaging compositions and processes (photosensitive material contg. microencapsulated radiation sensitive compns., thermal development of)

IT Polyphosphoric acids  
RL: USES (Uses)  
(sodium salt, \*\*\*imaging\*\*\* material with developer coating compn. contg., in microencapsulated radiation-sensitive compn., thermal \*\*\*image\*\*\* development in)

IT Photoduplication  
Photothermography  
(thermal development of photosensitive materials employing microencapsulated radiation sensitive compns. in relation to)

IT Clays, uses and miscellaneous  
RL: USES (Uses)  
(acidic, \*\*\*imaging\*\*\* material with developer coating compn. contg., in microcapsule coating contg. radiation-sensitive compn., thermal \*\*\*image\*\*\* development in)

IT 37199-81-8 95917-79-6 96538-18-0 96538-81-7  
RL: USES (Uses)  
( \*\*\*imaging\*\*\* material with developer coating compn. contg., in microencapsulated radiation-sensitive compn., thermal \*\*\*image\*\*\*

development in)  
IT 123-77-3 141-03-7 1330-20-7, uses and miscellaneous 5495-84-1  
10287-53-3 15625-89-5 24650-42-8 75081-21-9 89591-42-4  
RL: USES (Uses)  
( \*\*\*imaging\*\*\* material with microencapsulated photosensitive  
compn. contg., thermal \*\*\*image\*\*\* development in)  
IT 9004-64-2 34903-84-9  
RL: USES (Uses)  
( \*\*\*imaging\*\*\* material with photosensitive compn. encapsulated by,  
thermal development in)

L13 ANSWER 42 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1984:200945 CAPLUS  
DN 100:200945  
ED Entered STN: 08 Jun 1984  
TI Capsular \*\*\*imaging\*\*\* system comprising a decolorizing agent  
IN Sanders, Frederick W.; Wright, Richard F.; Adair, Paul C.  
PA Mead Corp., USA  
SO U.S., 11 pp.  
CODEN: USXXAM  
DT Patent  
LA English  
IC G03C007-00; G03C001-40; B41L001-20  
INCL 430138000  
CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4416966	A	19831122	US 1982-411721	19820825
PRAI	US 1982-411721		19820825		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 4416966	IC	G03C007-00; G03C001-40; B41L001-20
	INCL	430138000
	IPCI	G03C0007-00; G03C0001-40; B41L0001-20
	IPCR	G03F0007-00 [I,A]; G03F0007-00 [I,C]
	NCL	430/138.000; 430/211.000; 430/235.000; 430/374.000; 430/541.000; 503/208.000

AB A capsular photoimaging system is described in which the \*\*\*imaging\*\*\*  
material consists of a layer of capsules contg., as an internal phase, a  
radiation-sensitive compn. and a decolorizing agent. In the  
\*\*\*imaging\*\*\* process, the material is imagewise exposed to release the  
decolorizing agent from the capsules which imagewise reacts with a dye  
layer to give a color change. The decolorizing agent may also inhibit or  
reverse the color forming reaction between the dye precursor and the dye  
developer. Thus, capsules contg. 2,2'-bipyridine as a decolorizing agent  
and a photopolymerizable monomer were prep'd. by mixing 17.1% isoban 26.9,  
water 50, and 10% gum arabic 30.8 g, the mixt. heated to 60.degree. and  
urea 8.3 and \*\*\*resorcinol\*\*\* 0.8 g added thereto after adjustment of  
the pH to 4 with H2SO4. To this mixt. was then added, with stirring, a  
mixt. contg. TMPPA 50, benzophenone 2.5, Michler's ketone 0.28, and  
2,2'-bipyridine 10 g followed by addn. of HCHO 21.4 mL, (NH4)2SO4 0.6 g in  
H2O 62.2 g, adjustment of the pH to 9, and addn. of NaHSO3 2.8 g. The  
resultant capsules were coated on a phenolic resin-coated sheet contg.  
copikem X, dried, \*\*\*UV\*\*\* imagewise exposed through a  
\*\*\*photomask\*\*\*, and passed through a set of pressure rollers to produce  
an \*\*\*image\*\*\* with a Dmax of 0.72 and a Dmin of 0.45.

ST capsular photoimaging compn decolorizing agent  
IT Phenolic resins, uses and miscellaneous  
Polyureas  
RL: USES (Uses)  
(capsular photopolymerizable photoimaging compns. contg.)  
IT Photoimaging compositions and processes  
(photopolymerizable, capsular, decoloring agent for)  
IT 9011-05-6 29512-49-0 89591-42-4  
RL: USES (Uses)  
(capsular photopolymerizable photoimaging compns. contg.)  
IT 366-18-7  
RL: USES (Uses)  
(capsular photopolymerizable photoimaging system contg., as

decolorizing agent)  
IT 90-94-8 119-61-9, properties  
RL: USES (Uses)  
(capsular photopolymerizable photoimaging systems contg. bipyridine  
decolorizing agent and)

L13 ANSWER 43 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1984:183252 CAPLUS  
DN 100:183252  
ED Entered STN: 26 May 1984  
TI Thermally developable diazo copying material  
PA Ricoh Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 7 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC G03C001-58; B41M005-18  
CC 74-10 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 58211145	A2	19831208	JP 1982-95551	19820602
PRAI	JP 1982-95551		19820602		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 58211145	IC	G03C001-58; B41M005-18
	IPCI	G03C0001-58; B41M0005-18

AB A thermally developable diazo material has a photosensitive layer contg. a diazo compd., a coupler having a soly. .ltoreq.0.1% in H2O and selected from C6-50 alkyl-, aralkyl- or arylamine salts of \*\*\*resorcinol\*\*\* (or phloroglucinol) carboxylic acids that may be substituted, and an auxiliary agent m. 50-150.degree.. The compn. provides copies with high d. \*\*\*images\*\*\* (usable as intermediate copies), permits the use of low-cost copiers, and has good storage stability. Thus, a mixt. of 1-5.mu. silica powder 2, 10% poly(vinyl alc.) 10, and 1-5.mu. stearamide powder 20 g dispersed in 100 cm3 H2O was coated on a paper support. A photosensitive soln. contg. 4-diazo-2,5-dibutoxyphenylmorpholine chloride-1/2ZnCl2 1.5, thiourea 1, 3-hydroxycyanoacetanilide 1, Naphthol AS 2, phloroglucinolcarboxylic acid monostearamine salt 1, citric acid 2, saponin 0.1 g, iso-PROH 5 cm3, and H2O 100 cm3 was coated thereon to give a material which upon \*\*\*UV\*\*\* exposure and thermal development (3s at 90 or 110.degree.) gave high d. pure black \*\*\*images\*\*\*. Tests also showed good stability.

ST heat developable diazo copying material

IT Gelatins, uses and miscellaneous  
Saponins

RL: USES (Uses)

(diazo copying compn. contg., thermally developable, for high d.  
\*\*\*images\*\*\* )

IT Diazo process

(heat-developable compn. for, contg. amine salt of \*\*\*resorcinol\*\*\*  
or fluoroglucinolcarboxylic acids)

IT Paraffin waxes and Hydrocarbon waxes, uses and miscellaneous

RL: USES (Uses)

(chloro, diazo copying compn. contg., thermally developable, for high  
d. \*\*\*images\*\*\* )

IT 62-56-6, uses and miscellaneous 92-77-3 135-61-5 301-02-0  
3061-75-4 5182-30-9 7631-86-9, uses and miscellaneous 9002-88-4  
9004-62-0 9005-25-8, uses and miscellaneous 14726-58-0 19083-52-4  
21073-87-0 66398-49-0 74487-67-5 82465-20-1 89927-53-7  
89927-54-8

RL: USES (Uses)

(diazo copying compn. contg., thermally developable, for high d.  
\*\*\*images\*\*\* )

L13 ANSWER 44 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1984:112312 CAPLUS  
DN 100:112312  
ED Entered STN: 12 May 1984  
TI Latent \*\*\*image\*\*\* copying of confidential documents

PA Mitsubishi Paper Mills, Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC B41M003-14; B41M003-12  
CC 74-11 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 58179685	A2	19831020	JP 1982-61772	19820415
	JP 03056193	B4	19910827		
PRAI	JP 1982-61772		19820415		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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JP 58179685	IC	B41M003-14; B41M003-12
	IPCI	B41M0003-14; B41M0003-12
AB	Sheets for the transfer of ***UV*** -absorbing latent ***images*** to ordinary paper by application of pressure have a recording layer contg. an encapsulated ***UV*** -absorbent and a wax. The sheets provide a means of copying confidential documents in latent ***images*** invisible in ordinary light but visible in ***UV*** light. Thus, a soln. of 2-(2'-hydroxy-5'-methylphenyl)benzotriazole (Tinuvin P) in a diarylethane solvent (Hisol SAS N-296; Nippon Petrochem. Co.) was dispersed in a mixt. of ethylene-maleic anhydride copolymer, urea, ***resorcinol***, and water, and capsules were formed by addn. of HCHO. The capsules were mixed with a paraffin wax emulsion, starch, and a styrene-butadiene latex and coated on a paper support. The coated sheet was placed on ordinary paper and hand-written on the backside to obtain an invisible copy readable only under ***UV*** light.	
ST	copying confidential document latent ***image***	
IT	Paraffin waxes and Hydrocarbon waxes, uses and miscellaneous	
	RL: USES (Uses)	
	(copying paper contg., for recording ***UV*** -readable latent ***images*** for confidential documents)	
IT	Copying process	
	(for ***UV*** -readable latent ***images*** for confidential documents)	
IT	Recording materials	
	(pressure transfer of ***UV*** -readable latent ***images*** of confidential documents in relation to)	
IT	Copying paper	
	(pressure-sensitive, for recording ***UV*** -readable latent ***images*** for confidential documents)	
IT	57-13-6, uses and miscellaneous 108-46-3, uses and miscellaneous	
	131-56-6 2440-22-4 6196-95-8 9005-25-8, uses and miscellaneous	
	9006-26-2	
	RL: USES (Uses)	
	(copying paper contg., for recording ***UV*** -readable latent ***images*** for confidential documents)	
IT	9003-55-8	
	RL: USES (Uses)	
	(in copying paper for recording ***UV*** -readable latent ***images*** for confidential documents)	

L13 ANSWER 45 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1983:567080 CAPLUS

DN 99:167080

ED Entered STN: 12 May 1984

TI Diazo photosensitive materials

PA Daicel Chemical Industries, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC G03C001-52

CC 74-10 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 58115431 A2 19830709 JP 1981-214124 19811228  
PRAI JP 1981-214124 19811228

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 58115431	IC	G03C001-52
	IPCI	G03C0001-52

GI

/ Structure 39 in file .gra /

AB Diazo copying materials contain a coupler of the general formula I (R,R1 = C1-4 alkyl, alkoxy, alkoxy carbonyl, CO2H, H, halo) and a diazo compd. of the general formula II (R2,R3 = C1-5 alkyl, identical or different; R4 = H, alkyl, alkoxy, halo; X = anion). The photosensitive materials give excellent shading in the \*\*\*image\*\*\* portion, good transparency in the non- \*\*\*image\*\*\* portion, and \*\*\*images\*\*\* with high stability. Thus, a 100-.mu.m thick poly(ethylene terephthalate) film support was coated with a photosensitive layer contg. cellulose acetate propionate (binder), citric acid, 3,5-di-tert-butyl-4-hydroxytoluene (coupling inhibitor), .beta.-resorcylic acid (coupler), and 4-di-n-butylamino-3-chlorobenzenediazonium tetrafluoroborate, imagewise exposed to \*\*\*UV\*\*\* light, and developed with NH3 to give a sepia \*\*\*image\*\*\* with a max. d. of 3.2 and min. d. of 0.12. The \*\*\*image\*\*\* showed excellent preservability.

ST diazo copying compn coupler

IT Diazo process

(light-sensitive compn. for, contg. \*\*\*resorcinol\*\*\* -type coupler and diazonium tetrafluoroborate compd.)

IT 89-86-1 99-10-5 108-46-3, uses and miscellaneous 347-46-6  
58672-64-3 72470-82-7

RL: USES (Uses)

(diazo copying compn. contg.)

L13 ANSWER 46 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1983:480093 CAPLUS

DN 99:80093

ED Entered STN: 12 May 1984

TI Negative type copying material and copying method

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC G03C001-72; G03C001-68

CC 74-10 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 58100127	A2	19830614	JP 1981-198428	19811211
PRAI JP 1981-198428		19811211		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 58100127	IC	G03C001-72; G03C001-68
	IPCI	G03C0001-72; G03C0001-68

AB Neg. type photocopying materials are composed of an azide compd. and a coupler as photochromic constituents and of a neg. type photopolymer as photocuring constituent. The copying material is exposed through a neg. original by \*\*\*UV\*\*\* irradiation, and then the photochromic constituents and the neg. type photopolymer are removed from unexposed area by swelling or by dissolving. The process is very useful for producing pos. \*\*\*images\*\*\* of various color tones. Thus, photosensitive compn. contg. 1-azidopyrene 2, \*\*\*resorcinol\*\*\* 1, and phenol-novolac resin 10 parts was coated on a matted polyester-film support, contacted with a transparent neg. original, and \*\*\*UV\*\*\* exposed to form a brown pos. color \*\*\*image\*\*\* which was intensified upon development with a 1% NaOH aq. soln. for 1 min.

ST photocopying compn azide coupler; photochromic photocopying compn  
IT Diazo process  
(azide compd.-coupler light-sensitive reaction mixt. for \*\*\*image\*\*\*  
formation in relation to)  
IT Phenolic resins, uses and miscellaneous  
RL: USES (Uses)  
(novolak, photocopying material contg., sensitive to \*\*\*UV\*\*\*  
radiation)  
IT Photoduplication  
(photosensitive materials contg. azide compd. and coupler for)  
IT 79-01-6 92-44-4 97-90-5 108-46-3, uses and miscellaneous 108-73-6  
868-77-9 2718-90-3 6652-28-4 9002-89-5 9003-20-7 9004-36-8  
24573-95-3 24968-99-8 36171-39-8  
RL: USES (Uses)  
(photocopying material contg., sensitive to \*\*\*UV\*\*\* radiation)

L13 ANSWER 47 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1983:225358 CAPLUS  
DN 98:225358  
ED Entered STN: 12 May 1984  
TI System of forming \*\*\*images\*\*\* and impressionable sheets using it  
IN Sanders, Frederick W.; Hillenbrand, Gary F.; Arney, Jonathan S.; Wright,  
Richard F.  
PA Mead Corp., USA  
SO Belg., 66 pp.  
CODEN: BEXXAL  
DT Patent  
LA French  
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	BE 894499	A1	19830328	BE 1982-209095	19820927
	US 4440846	A	19840403	US 1981-320643	19811112
	AU 8286929	A1	19830519	AU 1982-86929	19820806
	AU 548373	B2	19851205		
	CA 1194723	A1	19851008	CA 1982-409389	19820813
	BR 8205734	A	19830906	BR 1982-5734	19820930
	FR 2516268	A1	19830513	FR 1982-16938	19821008
	FR 2516268	B1	19851206		
	DE 3241672	A1	19830519	DE 1982-3241672	19821111
	JP 58088740	A2	19830526	JP 1982-198849	19821112
	GB 2112536	A1	19830720	GB 1982-32392	19821112
	GB 2112536	B2	19860423		
	US 4536463	A	19850820	US 1983-562308	19831216
	US 4842981	A	19890627	US 1984-613548	19840524
PRAI	US 1981-320643	A	19811112		
	US 1983-562308	A1	19831216		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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BE 894499	IPCI	G03C
US 4440846	IPCI	G03C0001-40; G03C0001-00
	IPCR	G03F0007-00 [I,A]; G03F0007-00 [I,C]
	NCL	430/138.000; 430/211.000
AU 8286929	IPCI	G03C0001-68; G03C0005-54; G03C0007-30
CA 1194723	IPCI	G03C0005-54 [ICM,4]
	IPCR	G03F0007-00 [I,A]; G03F0007-00 [I,C]
BR 8205734	IPCI	G03G0013-14; G03G0015-044
FR 2516268	IPCI	G03C0001-72; B41M0005-16; G03D0005-00
	IPCR	G03F0007-00 [I,A]; G03F0007-00 [I,C]
DE 3241672	IPCI	G03C0005-24
	IPCR	G03F0007-00 [I,A]; G03F0007-00 [I,C]
JP 58088740	IPCI	G03C0001-00; B41M0005-12; G03C0001-72; G03C0005-00
GB 2112536	IPCI	G03C0001-68
	IPCR	G03F0007-00 [I,A]; G03F0007-00 [I,C]
US 4536463	IPCI	G03C0001-72 [ICM,3]; G03C0005-54 [ICS,3]; G03C0005-16 [ICS,3]
	IPCR	G03F0007-00 [I,A]; G03F0007-00 [I,C]
	NCL	430/138.000; 430/211.000; 430/235.000; 430/345.000
US 4842981	IPCI	G03C0001-68 [ICM,4]; G03C0005-16 [ICS,4]; B41L0001-20

[ICS,4]; B32B0005-16 [ICS,4]  
IPCR G03F0007-00 [I,A]; G03F0007-00 [I,C]  
NCL 430/138.000; 428/402.200; 428/402.220; 428/402.240;  
430/211.000; 430/235.000; 430/345.000; 430/962.000;  
503/225.000

OS MARPAT 98:225358

AB Films comprised of a support coated with pressure-rupturable microcapsules contg. color formers and photohardenable substances are imagewise exposed and pressurized to selectively release color formers which are made to react with a developer to give a color \*\*\*image\*\*\*. Thus, photosensitive microcapsules prep'd. with mixts. of Soln A (gum arabic, isobutylene-maleic anhydride polymer, NaOH, urea, \*\*\*resorcinol\*\*\*, and H2SO4 as pH regulator combined to form a mixt. called the aq. phase) and Soln. B (trimethylolpropane triacrylate, Me methacrylate, 3-diethylamino-6-methyl-7-anilino-fluoran color former, benzoin Me ether, and 4,4'-bis(dimethylamino)benzophenone combined to form a mixt. called the org. phase) to which were added sequentially HCHO, (NH4)2SO4, NaOH, and NaHSO3 to form the microcapsules, were applied as an aq. phase on a paper support, dried, \*\*\*UV\*\*\* imagewise exposed using a pos. transparency and glass cover, contacted with a developer sheet, and passed through pressure rollers and the sheets sepd. to give a black reverse \*\*\*image\*\*\*.

ST color photoimaging sheet; photoduplication color sheet; microcapsule duplication color sheet

IT Photoduplication  
(color \*\*\*imaging\*\*\* system comprised of microcapsules contg. color former and photohardenable substance for)

IT Photoimaging compositions and processes  
(color, contg. microencapsulated color former and photohardenable material)

IT Encapsulation  
(micro-, of color formers and photohardenable compns. for color photoimaging systems)

IT 50-00-0, uses and miscellaneous 57-13-6, uses and miscellaneous  
80-62-6 90-94-8 108-46-3, properties 3290-92-4 3524-62-7  
9000-01-5 9011-05-6 15625-89-5 17831-71-9 26426-80-2

RL: USES (Uses)  
(in microencapsulation of color formers and photohardenable compns. for color photoimaging systems)

IT 29512-49-0  
RL: USES (Uses)  
(microencapsulation of photosensitive substance and, for color photoimaging systems)

L13 ANSWER 48 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1983:225357 CAPLUS

DN 98:225357

ED Entered STN: 12 May 1984

TI System of forming \*\*\*images\*\*\* by transfer

IN Sanders, Frederick W.; Hillenbrand, Gary F.; Arney, Jonathan S.; Wright, Richard F.

PA Mead Corp., USA

SO Belg., 57 pp.

CODEN: BEXXAL

DT Patent

LA French

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	BE 894497	A1	19830328	BE 1982-209093	19820927
	US 4399209	A	19830816	US 1981-320356	19811112
	AU 8286930	A1	19830519	AU 1982-86930	19820806
	AU 563186	B2	19870702		
	CA 1199514	A1	19860121	CA 1982-408987	19820809
	BR 8205733	A	19830906	BR 1982-5733	19820930
	FR 2516269	A1	19830513	FR 1982-16939	19821008
	FR 2516269	B1	19851206		
	JP 58088739	A2	19830526	JP 1982-195852	19821108
	DE 3241671	A1	19830519	DE 1982-3241671	19821111
	GB 2111232	A1	19830629	GB 1982-32427	19821112



GB 2111232	B2	19860409		
US 4551407	A	19851105	US 1983-520023	19830803
US 4822714	A	19890418	US 1985-727695	19850426
PRAI US 1981-320356	A	19811112		
US 1983-520023	A1	19830803		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
BE 894497	IPCI	G03C
US 4399209	IPCI	G03C0001-40; G03C0001-00
	IPCR	G03F0007-00 [I,A]; G03F0007-00 [I,C]
	NCL	430/138.000; 430/211.000
AU 8286930	IPCI	G03C0001-68; G03C0005-54; G03C0007-30
CA 1199514	IPCI	G03C0005-54 [ICM,4]
	IPCR	G03F0007-00 [I,A]; G03F0007-00 [I,C]
BR 8205733	IPCI	G03G0013-14; G03G0015-044
FR 2516269	IPCR	G03F0007-00 [I,A]; G03F0007-00 [I,C]
JP 58088739	IPCI	G03C0001-00; B41M0005-12; G03C0001-72; G03C0005-00
DE 3241671	IPCI	G03C0005-24
	IPCR	G03F0007-00 [I,A]; G03F0007-00 [I,C]
GB 2111232	IPCI	G03C0001-68; G03C0005-24
	IPCR	G03F0007-00 [I,A]; G03F0007-00 [I,C]
US 4551407	IPCI	G03C0001-72 [ICM,4]; G03C0005-54 [ICS,4]; G03C0005-16 [ICS,4]
	IPCR	G03F0007-00 [I,A]; G03F0007-00 [I,C]
	NCL	430/138.000; 430/211.000; 430/235.000; 430/345.000
US 4822714	IPCI	G03C0001-72 [ICM,4]; G03C0005-16 [ICS,4]
	IPCR	G03F0007-00 [I,A]; G03F0007-00 [I,C]
	NCL	430/138.000; 428/402.210; 428/402.220; 428/402.240; 430/211.000; 430/235.000; 430/345.000; 430/962.000
AB		A suitable support coated with a layer comprised of pressure-rupturable microcapsules contg. a color former and photohardenable substance is used to form a reverse color ***image***. Upon imagewise exposure and subjection to pressure the microcapsules ***pattern*** -wise rupture and release color former, which reacts with a developer to give a color ***image***. Thus, a paper support was coated with an aq. paste of microcapsules prep'd. using a mixt. of Soln A (gum arabic, isobutylene-maleic anhydride, NaOH, urea, ***resorcinol***, and H2SO4 for pH adjustment), Soln B (trimethylolpropane triacrylate, Me methacrylate, 3-diethylamino-6-methyl-7-anilinofluoran color former, benzoin Me ether, and 4,4'-bis(dimethylamino)benzophenone and formaldehyde followed by the addn. of (NH4)2SO4 and NaHSO3, ***UV*** imagewise exposed using a pos. transparency and glass cover plate, contacted with a receptor sheet contg. developer, calendered, and the sheets sepd. to give a black reverse ***image***.
ST		color photoimaging microcapsule; photoduplication color microcapsule
IT		Clays, uses and miscellaneous
	RL: USES (Uses)	(receptor sheet contg., for transfer color photoimaging assembly)
IT		Photoduplication
		Photoimaging compositions and processes
		(color, microcapsules contg. color former and photohardenable substance for)
IT		Encapsulation
		(micro-, of color former and photohardenable substance for color photoimaging material)
IT		50-00-0, uses and miscellaneous 57-13-6, uses and miscellaneous
		80-62-6 7631-90-5 7783-20-2, properties 9000-01-5 9011-05-6
		15625-89-5 26426-80-2
	RL: USES (Uses)	(in microencapsulation of color former and photohardenable substance for color photoimaging material)
IT		108-46-3, properties
	RL: PRP (Properties)	(in microencapsulation of color former and photohardenable substance for color photoimaging material)
IT		90-94-8 3524-62-7
	RL: USES (Uses)	(microencapsulation of color former and photohardenable substance and, for color photoimaging material)
IT		29512-49-0
	RL: USES (Uses)	

(microencapsulation of photohardenable substance and, for color photoimaging material)

IT 1344-09-8 3486-35-9 7631-86-9, uses and miscellaneous 9003-55-8  
9072-56-4 10124-56-8 17831-71-9

RL: USES (Uses)

(receptor sheet contg., for transfer color photoimaging assembly)

L13 ANSWER 49 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1982:431299 CAPLUS

DN 97:31299

ED Entered STN: 12 May 1984

TI Vesicular film compositions and elements

IN Mandella, William L.; Kuszewski, James R.

PA GAF Corp., USA

SO Eur. Pat. Appl., 18 pp.

CODEN: EPXXDW

DT Patent

LA English

IC G03C005-00

CC 74-10 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 36036	A2	19810923	EP 1980-106880	19801107
	EP 36036	A3	19811028		
	EP 36036	B1	19850320		
	R: BE, CH, DE, FR, GB, IT, NL				
	US 4302524	A	19811124	US 1980-131350	19800319
	AU 8064075	A1	19810924	AU 1980-64075	19801104
	AU 532861	B2	19831013		
	CA 1137347	A1	19821214	CA 1980-365144	19801120
	JP 56143427	A2	19811109	JP 1981-10086	19810126
PRAI	US 1980-131350	A	19800319		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 36036	IC	G03C005-00
	IPCI	G03C0005-00
	IPCR	C08G0059-00 [I,C]; C08G0059-62 [I,A]; G03C0005-60 [I,A]; G03C0005-60 [I,C]
US 4302524	IPCI	G03C0001-60; G03C0001-76
	IPCR	C08G0059-00 [I,C]; C08G0059-62 [I,A]; G03C0005-60 [I,A]; G03C0005-60 [I,C]
	NCL	430/155.000; 430/152.000; 430/176.000; 430/192.000; 430/197.000; 430/271.100; 430/280.100; 430/290.000
AU 8064075	IPCI	G03C0001-72; G03C0001-52; G03C0001-54
CA 1137347	IPCI	G03C0001-60
	IPCR	C08G0059-00 [I,C]; C08G0059-62 [I,A]; G03C0005-60 [I,A]; G03C0005-60 [I,C]
JP 56143427	IPCI	G03C0001-52

AB Vesicular photoimaging compns. are described which use as the binder a novolac-branched epoxy resin of a diglycidyl ether and a dihydric phenol which is sparingly permeable to the nucleating gas. Thus, a soln. of an epoxy resin (prepd. from sulfonyldiphenol, PhOH-HCHO resin, and

\*\*\*resorcinol\*\*\* diglycidyl ether) 100 and 4-morpholino-2,5-diethoxybenzenediazonium fluoroborate 1.0 g were coated on a 4 mil polyester film, dried to give a thickness of 5 .mu.m, exposed to a \*\*\*UV\*\*\* light (Nu Arc Platemaker) for 40 s, and developed through a Canon Nal-Developer to give a dense vesicular \*\*\*image\*\*\*.

ST vesicular photoimaging compn binder; epoxy resin vesicular photoimaging compn; novolac epoxy resin binder photoimaging

IT Phenolic resins, uses and miscellaneous

RL: USES (Uses)

(epoxy resins modified by, binders, in vesicular photoimaging compns.)

IT Binding materials

(novolac-branched epoxy resins, in vesicular photoimaging compns.)

IT Epoxy resins, uses and miscellaneous

RL: USES (Uses)

(novolac-branched, binders, in vesicular photoimaging compns.)

IT Photoimaging compositions and processes

(vesicular, binders for, novolac-branched epoxy resins of diglycidyl

ether with dihydric phenol as)  
 IT 80975-21-9 80975-22-0 80983-95-5  
 RL: USES (Uses)  
 (binder, for vesicular photoimaging compns.)  
 IT 4979-72-0  
 RL: USES (Uses)  
 (vesicular photoimaging compns. contg. novolac-branched epoxy resin  
 binder and)

L13 ANSWER 50 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1979:466366 CAPLUS  
 DN 91:66366  
 ED Entered STN: 12 May 1984  
 TI Duplication-proof photographic film  
 IN Voisin, Paul-Henri; Mizianty, Michael, F.  
 PA Xidex Corp., USA  
 SO U.S., 4 pp.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 IC G03C001-58; G03C001-52  
 INCL 096049000  
 CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic Processes)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4152156	A	19790501	US 1974-514354	19741015
PRAI	US 1974-514354	A	19741015		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 4152156	IC	G03C001-58; G03C001-52
	INCL	096049000
	IPCI	G03C0001-58; G03C0001-52
	IPCR	G03C0001-52 [I,A]; G03C0001-52 [I,C]; G03C0005-08 [I,C]; G03C0005-10 [I,A]; G03C0005-60 [I,A]; G03C0005-60 [I,C]
	NCL	430/151.000; 430/150.000; 430/152.000

AB A duplication-proof photoimaging material consists of a support coated with a synthetic polymer having a N2 permeability suitable for use as a vehicle in vesicular film, and a photosensitive diazo compn. including a photosensitive diazonium salt and a dye-forming coupler. Upon imagewise exposure and development, a vesicular \*\*\*image\*\*\* is formed in the exposed areas and an azo dye is formed in the nonexposed areas. The \*\*\*image\*\*\* formed from the vesicles relative to the azo dye provide sufficient contrast for viewing by projected light but insufficient contrast for contact copying with \*\*\*UV\*\*\* light. Thus, a poly(ethylene terephthalate) support was coated (6 .mu. dry) with a soln. contg. a bis(p-hydroxyphenyl) sulfone-epichlorohydrin- \*\*\*resorcinol\*\*\* polymer 5.0, 2,5-diethoxy-4-morpholinobenzenediazonium fluoroborate 0.15, N,N'-ethyleneacetoacetamide 0.10, 5-sulfosalicylic acid 0.08, and 2-methoxyethanol 20.0g. The coating was then exposed through a Ag step wedge to a medium pressure Hg arc lamp (400 W), and then developed by a 5 s application of 30 psig of anhyd. NH3 at 60.degree.. A projection Dmax of 2.35 and a Dmin of 0.12 were obtained. Attempts to copy this film by contact printing on vesicular or diazo duplication films failed to yield a discernible \*\*\*image\*\*\*.

ST duplication proof photoimaging compn; photosensitive diazo \*\*\*imaging\*\*\* compn; vesicular \*\*\*imaging\*\*\* compn

IT Photoimaging compositions and processes  
 (duplication-proof, contg. photosensitive diazo compn. and vesiculable binder)

IT Acrylic polymers, uses and miscellaneous  
 RL: USES (Uses)  
 (photoimaging compns. contg. diazo compd. and, duplication-proof)

IT 97-05-2 102-01-2 871-78-3 9010-76-8 9011-14-7 25068-38-6  
 68003-10-1  
 RL: USES (Uses)  
 (photoimaging compns. contg. diazo compd. and, duplication-proof)

IT 3142-46-9 4979-72-0  
 RL: USES (Uses)  
 (photoimaging materials contg., duplication-proof)

L13 ANSWER 51 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1978:435373 CAPLUS  
 DN 89:35373  
 ED Entered STN: 12 May 1984  
 TI Templates for the manufacture of semiconductor components  
 IN Mueller-Uri, Hans; Muehlfriedel, Eberhard; Griebel, Guenter; Gerstner, Herbert  
 PA Ger. Dem. Rep.  
 SO Ger. (East), 7 pp.  
 CODEN: GEXXA8  
 DT Patent  
 LA German  
 IC H01L021-308  
 CC 76-13 (Electric Phenomena)  
 Section cross-reference(s): 74

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DD 129130	Z	19771228	DD 1976-195262	19761014
PRAI	DD 1976-195262	A	19761014		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
DD 129130	IC	H01L021-308
	IPCI	H01L0021-308

AB \*\*\*Masks\*\*\* for the prepn. of semiconductor devices are prepd. by forming a layer of a mixt. of a diazonium salt, .gtoreq.1 coupler, a stabilizer, and a carrier on a smooth glass plate, illuminating in the \*\*\*UV\*\*\* range, and developing with NH3 vapor. Different colors are obtained in the \*\*\*masks\*\*\* by means of different couplers or combinations of couplers. Thus, a mixt. of diazonium salt 10-50, \*\*\*resorcinol\*\*\* or 2,3-dihydroxynaphthalene 10-50, citric or tartaric acid 2-25, and diacetate or triacetate 5-25% was dissolved in a solvent, filtered, and coated on a precleaned glass plate by spin coating. Then the coating was illuminated in the \*\*\*UV\*\*\* range through a \*\*\*pattern\*\*\* corresponding to the desired structure and developed in NH3 vapor. The \*\*\*masks\*\*\* prepd. by this method combine the advantages of photo- and metal \*\*\*masks\*\*\*, but are useful in a limited spectral range.

ST \*\*\*photomask\*\*\* semiconductor device prepn; diazo process

IT \*\*\*photomask\*\*\* prepn

IT \*\*\*Photomasks\*\*\* (diazo process in prepn. of, for semiconductor device manuf.)

IT Diazo process (in \*\*\*photomask\*\*\* prepn. for semiconductor device manuf.)

IT Semiconductor devices ( \*\*\*photomasks\*\*\* for manuf. of, diazo process in prepn. of)

L13 ANSWER 52 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1977:49226 CAPLUS  
 DN 86:49226  
 ED Entered STN: 12 May 1984  
 TI Vesicular \*\*\*image\*\*\* transfer process  
 IN Chaikin, Saul W.  
 PA Xidex Corp., USA  
 SO U.S., 5 pp.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 IC G03C005-54  
 INCL 096029000R  
 CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3979211	A	19760907	US 1974-441094	19740211
PRAI	US 1974-441094	A	19740211		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 3979211	IC	G03C005-54

INCL 096029000R  
IPCI G03C0005-54; G03C0005-18; G03C0005-34  
IPCR G03C0005-60 [I,A]; G03C0005-60 [I,C]  
NCL 430/152.000; 430/008.000; 430/155.000; 430/201.000;  
430/203.000

AB A vesicular \*\*\*imaging\*\*\* process suitable for adding information to a microfilm is comprised of exposing a photosensitive vesicular \*\*\*imaging\*\*\* film to actinic light to form a latent N gas \*\*\*image\*\*\*, contacting the film with a nonphotosensitive receiving film, such as a microfilm, applying heat and pressure to transfer the latent N gas \*\*\*image\*\*\* to the receiving film and heating the receiving film to develop a vesicular \*\*\*image\*\*\*. Thus, a soln. prepd. from a 19% soln. of 4,4'-dihydroxydiphenyl sulfone- \*\*\*resorcinol\*\*\* diglycidyl ether polymer in Me Cellosolve 79, p-(2,5-diethoxymorpholino)benzenediazonium fluoroborate (I) 0.6, and Silicone L5202 (Union Carbide) 0.1 g was coated on a polyester film to yield a dry thickness of 250 .mu.in. after drying at 105.degree.. A nonphotosensitive film was similarly prepd. except the coating soln. contained no I. The photosensitive film was exposed to \*\*\*UV\*\*\* radiation through an alphanumeric Ag film pos. master in a com. vacuum frame printer for 10s, contacted with the receiving film, heated at 60.degree. for 50s to transfer the latent \*\*\*image\*\*\*, and the receiving film was separated from the sandwich, and passed through a hot roll at 115.degree. to develop a sharp neg. \*\*\*image\*\*\* of the original.

ST vesicular \*\*\*image\*\*\* transfer photog; microfilm vesicular \*\*\*image\*\*\* transfer

IT Photographic films  
(for microfilm \*\*\*imaging\*\*\* )

IT Epoxy resins, uses and miscellaneous  
RL: USES (Uses)  
(photog. vesicular \*\*\*image\*\*\* transfer films contg. diazonium compd. and)

IT Microfilms  
(vesicular \*\*\*image\*\*\* transfer to)

IT Photoimaging compositions and processes  
(vesicular, \*\*\*image\*\*\* transfer by, for microfilms)

IT 9010-76-8 61596-94-9  
RL: USES (Uses)  
(photog. vesicular \*\*\*image\*\*\* transfer films contg. diazonium compd. and)

IT 4979-72-0  
RL: USES (Uses)  
(photog. vesicular \*\*\*image\*\*\* -transfer films contg.)

L13 ANSWER 53 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1976:427334 CAPLUS

DN 85:27334

ED Entered STN: 12 May 1984

TI Diazo copying sheets for secondary masters

IN Arai, Yoichi; Iiyama, Kiyotaka; Hirabayashi, Takeo

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC G03G

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 50136021	A2	19751028	JP 1974-41710	19740416
PRAI	JP 1974-41710		19740416		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 50136021	IC	G03G
	IPCI	G03G [ICM]

GI

AB A photosensitive compn. contg. (1) a diazo compd. (I or II; R = C1-4 alkyl, alkoxy, halo; X = anion), (2) a coupler selected from alkylphenols, phloroglucinol, phloroglucinol derivs., and \*\*\*resorcinols\*\*\*, and (3) a stabilizer acid is coated on a support having a hydrophobic poly(vinyl alc.) surface layer or a hydrophilic vinyl acetate resin surface layer to give a 2-component wet-development-type diazo copying sheet useful for prepn. of secondary masters. The diazo material has good sensitivity and forms \*\*\*images\*\*\* having high \*\*\*uv\*\*\* absorbance. The hydrophilic vinyl acetate resin surface or the hydrophobic poly(vinyl alc.)-base surface layer exhibits excellent bonding with the photosensitive layer and also stabilizes the diazo compd. layer. Thus, a tracing paper was coated with poly(vinyl acetate), and the surface of the coated paper was then saponified to give a hydrophilic surface which was coated with a compn. consisting of 4-(p-methoxybenzoylamino)-2,5-dimethoxybenzenediazonium chloride-ZnCl<sub>2</sub> double salt 1.5, .alpha.-resorcylic acid methyl ester 2.0, citric acid 1.0, H<sub>3</sub>BO<sub>3</sub> 1.0, tri-Na 1,3,6-naphthalenetrisulfonate 0.5, gum arabic 0.1 g, and H<sub>2</sub>O 100 ml to give a diazo copying sheet, which was \*\*\*pattern\*\*\* exposed and developed with 5% KBO<sub>2</sub>. The optical ds. of the \*\*\*images\*\*\* on a background were 1.52 and 0.20, resp., which changed to 1.49 and 0.21, resp., when the sheet was stored at 50.degree. and 50% relative humidity for 24 hr prior to the exposure. The corresponding values for a control without the poly(vinyl acetate) layer were 1.50 and 0.20, resp., and 1.35 and 0.41, resp., after the storage.

ST diazo copying sheet secondary master; vinyl acetate polymer diazo paper; alc vinyl polymer diazo paper

IT Diazo process  
(papers for, contg. hydrophilic or hydrophobic subbing layers for secondary masters)

IT Acetic acid ethenyl ester, homopolymer, saponified  
RL: USES (Uses)  
(hydrophilic coating from, for diazo copying papers)

IT 2150-44-9 5182-30-9 59640-45-8  
RL: USES (Uses)  
(diazo copying paper photosensitive compn. contg., for secondary masters)

L13 ANSWER 54 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1976:114194 CAPLUS

DN 84:114194

ED Entered STN: 12 May 1984

TI Developer for one-component diazo copying paper

IN Shiraishi, Shuhei; Maeda, Takeshi; Yamaguchi, Itaru; Komiyama, Tomoyuki

PA Ricoh Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.  
CODEN: JKXXAF

DT Patent

LA Japanese

IC G03C

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 50099324	A2	19750807	JP 1974-1238	19731228
PRAI	JP 1974-1238	A	19731228		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 50099324	IC	G03C
	IPCI	G03C0001-52

AB A developer for single-component diazo copying paper consists of .gtoreq.1 coupler selected from derivs. of phloroglucinol, \*\*\*resorcinol\*\*\*, naphthol, and compds. contg. a reactive methylene group and .gtoreq.1 solvent selected from polyhydric alcs. and glycol ethers. Increase in the concn. of the developer with time is prevented, and thus the developer produces uniform d. \*\*\*images\*\*\*. Furthermore, the developer yields dry copies. Thus, a diazo copying paper was obtained by coating high-grade paper with a photosensitive liq. contg. H<sub>2</sub>O 11., glycerol 20, Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub> 20, Na 1,3,6-naphthalenetrisulfonate 10, 2,5-diethoxy-4-methylthiobenzenediazonium chloride 1/2 ZnCl<sub>2</sub> double salt 10, and thiourea 30 g. This paper was placed in contact with a transparent original,

exposed to \*\*\*uv\*\*\* , and developed for 1 min in a liq. soln. contg. propylene glycol 400, diethylene glycol monomethyl ether 600 ml, and 2,3-dihydroxynaphthalene 80 g to give a purple copy. When the paper was contacted with a 100.degree. roller immediately following development, the purple color appeared instantaneously.

ST liq developer diazo copying paper; polyhydric alc developer diazo copying; naphthol liq developer diazo; hydroxybenzene liq developer diazo

IT Diazo process  
(1-component, liq. developers contg. polyhydric alcs. and polyhydroxy arom. couplers for)

IT Ethers, uses and miscellaneous  
RL: USES (Uses)  
(glycol, liq. developers contg. polyhydroxy arom. couplers and for 1-component diazo copying papers)

IT Glycols, uses and miscellaneous  
RL: USES (Uses)  
(liq. developers contg. polyhydroxy arom. couplers and, for 1-component diazo copying papers)

IT Alcohols, uses and miscellaneous  
RL: USES (Uses)  
(polyhydric, liq. developers contg. polyhydroxy arom. couplers and, for 1-component diazo copying papers)

IT 57-55-6, uses and miscellaneous 111-77-3  
RL: USES (Uses)  
(liq. developers contg. dihydroxynaphthalene coupler and, for 1-component diazo copying papers)

IT 92-44-4  
RL: USES (Uses)  
(liq. developers contg. polyhydric alcs. and, for 1-component diazo copying papers)

L13 ANSWER 55 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1974:126777 CAPLUS

DN 80:126777

ED Entered STN: 12 May 1984

TI Two component diazo photographic materials for forming \*\*\*image\*\*\* on recording plates

IN Fujita, Akira

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

INCL 103B3

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 48083819	A2	19731108	JP 1972-12847	19720207
	JP 50035809	B4	19751119		
PRAI	JP 1972-12847	A	19720207		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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JP 48083819	INCL	103B3
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AB An \*\*\*uv\*\*\* -sensitive coating material consisting of a 2-component diazo photosensitive compn. 17-23, BuOAc 17-23, BuOH (or Me2CHOH) 51.3-64.5, and dioctyl phthalate 1.5-2.7 wt. % is useful for \*\*\*image\*\*\* formation on a phonog. record made of vinyl chloride-vinyl acetate copolymer. Thus, 23 wt. % of a diazo photosensitive material consisting of BuOH 100, ethylene glycol 3, tricarballic acid 5, thiosinamine 10, BuOAc 20, THF 20, 3-fluoro-4-morpholinobenzenediazonium chloride-ZnCl2 5, and \*\*\*resorcinol\*\*\* 2 parts was mixed with hydroxybutyl acetate 23, dioctyl phthalate 2.7, and BuOH 51.3 wt. %. A prerecorded phonog. record was immersed in the mixt. for 60 sec, washed with BuOH, dried, exposed to \*\*\*uv\*\*\* radiation through a positive, and developed with NH4OH soln. at 60-80.degree. to give a clear \*\*\*image\*\*\*. No sound quality deterioration was obsd. for the imaged record.

ST diazo photoimaging phonog record

IT Diazo process

(light-sensitive compn. for, 2-component, contg. vinyl polymer solvents, for \*\*\*imaging\*\*\* on phonograph records)

IT Sound records

(phonograph, vinyl polymer, diazo process materials contg. vinyl  
polymer solvents for \*\*\*imaging\*\*\* on)  
IT 71-36-3, uses and miscellaneous 123-86-4 52642-07-6  
RL: USES (Uses)  
(diazo process copying materials contg. solvents from, for  
\*\*\*imaging\*\*\* on vinyl polymer phonograph records)

L13 ANSWER 56 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1973:78137 CAPLUS  
DN 78:78137  
ED Entered STN: 12 May 1984  
TI Photographic film and \*\*\*image\*\*\* -recording process  
IN Robillard, Jean Jules  
PA Ricoh Co., Ltd.  
SO Ger. Offen., 20 pp.  
CODEN: GWXXBX  
DT Patent  
LA German  
IC G03C  
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic Processes)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2221027	A	19721116	DE 1972-2221027	19720428
	DE 2221027	C3	19790426		
	FR 2135792	A5	19721222	FR 1971-15315	19710429
	BE 782581	A1	19720816	BE 1972-116720	19720424
	NL 7205807	A	19721031	NL 1972-5807	19720428
PRAI	FR 1971-15315	A	19710429		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
DE 2221027	IC	G03C
	IPCI	G03G0005-02
	IPCR	G03C0001-73 [I,A]; G03C0001-73 [I,C]; G03C0005-56 [I,A]; G03C0005-56 [I,C]; G03G0005-026 [I,A]; G03G0005-026 [I,C]; G03G0017-00 [I,C]; G03G0017-02 [I,A]
FR 2135792	IPCI	G03C0005-00
	IPCR	G03C0001-73 [I,A]; G03C0001-73 [I,C]; G03C0005-56 [I,A]; G03C0005-56 [I,C]; G03G0005-026 [I,A]; G03G0005-026 [I,C]; G03G0017-00 [I,C]; G03G0017-02 [I,A]
BE 782581	IPCI	G03C
NL 7205807	IPCI	G03G0017-00; G03G0005-02; G03C0001-46; G03C0001-72

AB A 1st, imagewise, exposure generates a photochromic change or a latent  
\*\*\*image\*\*\* in the top layer of a material by local formation or  
destruction of a spectral sensitizer for the light-sensitive system of the  
main layer, where a neg. or pos. latent \*\*\*image\*\*\*, resp., is  
generated in the sensitized areas by an overall exposure. Ag halides,  
diazo, photopolymerizable compds., or photoconductors, with the proper  
chem., thermal, or electrostatic development, may be used in the systems.  
Thus, formation of an azo dye as sensitizer for an electrophotog. ZnO  
paper was achieved by coating the paper with a soln. contg.  
p-aminobenzenediazosulfonate, phloroglucinol, \*\*\*resorcinol\*\*\*, and  
other conventional diazo coating constituents. An imagewise 0.1 sec  
\*\*\*uv\*\*\* exposure was followed by ir irradiation to effect coupling of  
residual diazonium salt with the phenols. The paper was elec. charged,  
exposed to a white light source for 10-30 sec, and developed in a  
conventional liq. electrophotog. developer.

ST diazo electrophotog copying; \*\*\*imaging\*\*\* photog two system  
IT Photography, electro-  
(sensitization of zinc oxide photoconductive compns. in, by imagewise  
photogenerated dye sensitizers)

IT 14783-59-6  
RL: USES (Uses)  
(photog. sensitizer precursor, for electrophotog. zinc oxide)

IT 41137-47-7 41137-48-8 41137-49-9  
RL: USES (Uses)  
(photographic sensitizer precursor, for electrophotographic zinc oxide  
compns.)



L13 ANSWER 57 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1970:404669 CAPLUS  
DN 73:4669  
ED Entered STN: 12 May 1984  
TI Photopolymerizable coating for circuit boards  
IN Licari, James J.; Knaus, Gilbert M.; Barnett, Buford F.  
PA North American Rockwell Corp.  
SO Brit., 7 pp.  
CODEN: BRXXAA  
DT Patent  
LA English  
IC C08G  
CC 37 (Plastics Fabrication and Uses)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 1187652		19700415	GB 1967-11438	19670310
	DE 1618729			DE	
PRAI	US		19660310		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
GB 1187652	IC	C08G
	IPCI	C08G
	IPCR	C08F0299-00 [I,C]; C08F0299-02 [I,A]; C08G0059-00 [I,C]; C08G0059-06 [I,A]; C08G0059-16 [I,A]; C08G0059-40 [I,A]; G03F0007-038 [I,A]; G03F0007-038 [I,C]

AB The title coatings were prepd. Thus, an epoxidized novolak resin from bisphenol A and epichlorohydrin was refluxed with \*\*\*resorcinol\*\*\*, methacrylic acid, PhCH<sub>2</sub>NMe<sub>2</sub>, and hydroquinone in PhMe. MeCOEt was then added with continued refluxing. The product was spread on a panel and air dried. The coated panel was exposed to \*\*\*uv\*\*\* radiation through a photographic film having the desired \*\*\*pattern\*\*\*. The panel was washed with Me<sub>2</sub>CO to remove non-cured portions and produce the polymd. \*\*\*pattern\*\*\*.

ST circuit boards photopolymer; photopolymer circuit boards  
IT Polymerization  
    (by light, of acrylic polymers-epoxy resins, for elec. circuits)  
IT Electric circuits  
    (coatings for, photopolymerizable)  
IT Coating materials  
    (epoxy resins, for elec. circuits)  
IT 28064-14-4  
RL: USES (Uses)  
    (coatings, photopolymerizable)  
IT 79-41-4, uses and miscellaneous 108-46-3, uses and miscellaneous  
RL: USES (Uses)  
    (epoxy resin crosslinked with, for photopolymerizable coatings)

L13 ANSWER 58 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1969:435008 CAPLUS  
DN 71:35008  
ED Entered STN: 12 May 1984  
TI Diazotype reflex copying method  
IN Loprest, Frank J.  
PA GAF Corp.  
SO U.S., 5 pp.  
CODEN: USXXAM  
DT Patent  
LA English  
IC G01N; H01J  
INCL 250065000  
CC 74 (Radiation Chemistry, Photochemistry, and Photographic Processes)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3445654	A	19690520	US 1966-606082	19661230
	CH 476582	A	19690815	CH 1967-476582	19671129
	GB 1207367	A	19700930	GB 1967-1207367	19671219
	NL 6717767	A	19680701	NL 1967-17767	19671228
	FR 1549139	A	19681206	FR 1967-1549139	19671229

CLASS		
PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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US 3445654	IC	G01N; H01J
	INCL	250065000
	IPCI	G01N0021-34; H01J0037-22
	NCL	430/052.000; 427/557.000; 430/348.000
CH 476582	IPCI	G01N0021-34
GB 1207367	IPCI	G01N0021-34
NL 6717767	IPCI	B41M; G03C; G03G; G03B
FR 1549139	IPCI	B41M

AB A copy sheet with high elec. resistivity when dry, is coated with a layer contg. a diazonium salt, such as 4-benzamido-2,5-diethoxybenzenediazonium chloride, 3-chloro-4-diethylaminobenzenediazonium chloride, or 4-anilinobenzenediazonium sulfate, a \*\*\*resorcinol\*\*\* coupler, and a H2O-release agent, such as LiBO2.8H2O, Na2SO4.10H2O, NaH2PO4.12H2O, borax, Na alginate, or sugar. The sheet is then contact ir exposed by reflex, thus causing the \*\*\*image\*\*\* to heat to 70-150.degree. and thereby locally releasing H2O of hydration. The H2O renders the \*\*\*image\*\*\* areas elec. conductive. The sheet, with the sensitized layer being the cathode, is exposed to a d.c., which generates a high pH causing coupling to occur with the formation of a visible \*\*\*image\*\*\*. The nonionaged areas of diazonium salt are bleached with \*\*\*uv\*\*\* radiation to yield a white copy background.

ST copy process; diazo copy process; \*\*\*images\*\*\* diazo copy

IT Diazo process  
(copy sheets, for electrolytic development)

L13 ANSWER 59 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1969:408437 CAPLUS

DN 71:8437

ED Entered STN: 12 May 1984

TI Two-component diazo-type material

IN Rauhut, Herbert; Seibel, Markus; Thoese, Klaus

PA Kalle A.-G.

SO S. African, 12 pp.

CODEN: SFXXAB

DT Patent

LA English

CC 74 (Radiation Chemistry, Photochemistry, and Photographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	ZA 6802548		19680927		
	DE 1572107			DE	
	FR 1577999			FR	
	GB 1185795			GB	

PRAI DE 19670425

CLASS		
PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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AB A compn. contg. cellulose acetate propionate (av. mol. wt. 170,000) 900, acetone 5100, and EtCOME 4000 g. was coated on a 50-.mu. thick film of biaxially stretched and heat-set poly(ethylene terephthalate), the surface of which was pretreated according to the procedure given in Ger. 1,228,414. The dried lacquer left a coating 8-10 .mu. thick. This was sensitized by coating with a soln. of sulfosalicylic acid 2.2, thiourea 1.2, \*\*\*resorcinol\*\*\* 2.4, and 4-morpholino-2,5-diethoxybenzenediazonium tetrafluoroborate 5.4 g. and 85% HCO2H 3.5, H2O 30.0, and iso-PrOH 120.0 ml. The material was dried and imagewise exposed under a master and developed in a normal manner with NH3. It gave a strong brown color \*\*\*image\*\*\*. The \*\*\*image\*\*\* -free areas were highly transparent even to \*\*\*uv\*\*\* radiation.

ST transparencies diazo; diazo transparencies; color \*\*\*images\*\*\* diazo; \*\*\*images\*\*\* color diazo

IT Diazo process  
(copy sheets for)

L13 ANSWER 60 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1968:432029 CAPLUS

DN 69:32029

ED Entered STN: 12 May 1984  
TI Light-sensitive coating materials  
IN Warman, Horace; Butterfield, Peter G. M.; Ashfield, John L.; Allison, Kenneth; Foster, Gordon; Sparks, Maurice B.  
PA Pictograph Ltd.  
SO Brit., 3 pp.  
CODEN: BRXXAA  
DT Patent  
LA English  
IC C08F; G03C  
CC 74 (Radiation Chemistry, Photochemistry, and Photographic Processes)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 1109319		19680410	GB 1963-50762	19631223

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
GB 1109319	IC	C08F; G03C
	IPCI	C08F; G03C
	IPCR	G03C0001-52 [I,C]; G03C0001-61 [I,A]; G03C0001-64 [I,A]; G03C0001-64 [I,C]

AB An improved light-sensitive material stable during storage and useful at low temp. for the manuf. of templates is provided. The material includes a poly(vinyl acetate)-acrylic ester copolymer (I) dispersion contg.2-(2-butoxyethoxy)ethyl acetate (II) coalescing agent and a diazonium salt or a ferrocyanide light-sensitizing agent, and may contain a wetting agent and a pigment. The dispersion and the light-sensitive agent are supplied sep. and mixed just before use, as the 2 components sep. have indefinite shelf-life. Thus, a compn. (A) contg. I emulsion of 55% solids 1000, II 10, Manoxol OT 0.001, and soft water 1260 parts by vol. and a compn. (B) of citric or tartaric acid 10, thiourea 7, diazonium salt 30, and soft water 1000 parts by wt. were mixed, and the pH was adjusted to 2.2. The diazonium salt may be, e.g., the ZnCl2 salt of 4-diethylaminobenzene-diazonium chloride. E.g., A and B are mixed together in the vol. ratio 5:1.5-1.0. A metal surface suitably cleaned and degreased is coated with the mixt., and the coating exposed to

\*\*\*uv\*\*\* radiation and developed with a developing soln. such as borax 20, Na2S2O3 40, Na2CO3 20, coupling agent 10, saponin 0.5, and water to 1000 parts by wt. A suitable coupler is \*\*\*resorcinol\*\*\*  
ST light sensitive coatings; coatings light sensitive; \*\*\*images\*\*\* light sensitive coatings; ferrocyanides \*\*\*images\*\*\* prodn

IT Templates  
(light-sensitive compns. for)

IT 124-17-4  
RL: USES (Uses)  
(coalescing agent for light-sensitive compns. for templates)

IT 577-11-7 6217-19-2  
RL: USES (Uses)  
(light-sensitive compns. contg., for templates)

L13 ANSWER 61 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1968:13573 CAPLUS

DN 68:13573

ED Entered STN: 12 May 1984

TI Polymerization-rate control during irradiation of methyl .alpha.-chloroacrylate

IN Anspen, Harry D.

PA General Aniline and Film Corp.

SO U.S., 3 pp.

CODEN: USXXAM

DT Patent

LA English

INCL 204159230

CC 35 (Synthetic High Polymers)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3352771		19671114	US 1964-352635	19640317

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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US 3352771 INCL 204159230  
 IPCR C08F0020-00 [I,C]; C08F0020-22 [I,A]  
 NCL 522/046.000; 522/182.000; 523/136.000; 524/336.000;  
 524/740.000; 524/851.000; 526/208.000

GI For diagram(s), see printed CA Issue.

AB Me .alpha.-chloroacrylate (I) is polymd. by irradi. in the presence of 2,2'-dihydroxy-4,4'-dimethoxy-benzophenone (II) or benzoylresorcinol to prep. flaw-free, massive polymeric structures. II and benzoyl \*\*\*resorcinol\*\*\* are used as \*\*\*uv\*\*\* absorbers to prevent local heating and uneven growth in mol. wt. of the polymer. Thus, I was mixed with 0.05% of a silicone resin (DC-550) as a mold-release agent and 0.05% II and polymd. by irradi. at 3100 A. Polymn. required several days, but no perceptible temp. peak occurred. The polymer had no visible strain \*\*\*patterns\*\*\*. When II was omitted from the polymn. mixt., polymn. occurred in 8-14 hrs., a strong temp. peak was recorded during polymn., and the polymer had visible strain \*\*\*patterns\*\*\*.

ST POLYMN; POLYMN; POLYMN ME CHLOROACRYLATE; POLYMN; \*\*\*RESORCINOLS\*\*\* CHLOROACRYLATES; METHYL CHLOROACRYLATE IRRADN; BENZOPHENONES CHLOROACRYLATES

IT Polymerization inhibitors  
 (ar,ar-dihydroxybenzophenone or 2,2'-dihydroxy-4,4'-dimethoxybenzophenone as, for methyl 2-chloroacrylate by \*\*\*uv\*\*\* irradiation)

IT 131-54-4 28802-44-0  
 RL: USES (Uses)  
 (inhibitors from, for polymn. of methyl 2-chloroacrylate by \*\*\*uv\*\*\* irradiation)

IT 25704-33-0P  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (manuf. of, by \*\*\*uv\*\*\* irradiation, inhibitors for, ar,ar-dihydroxybenzophenone and 2,2'-dihydroxy-4,4'-dimethoxybenzophenone as)

L13 ANSWER 62 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1967:50729 CAPLUS

DN 66:50729

ED Entered STN: 12 May 1984

TI Positive-working lithographic printing plates

IN Smith, Frank Edward

PA Algraphy Ltd.

SO Brit., 3 pp.  
 CODEN: BRXXAA

DT Patent

LA English

IC G03C

CC 74 (Radiation Chemistry, Photochemistry, and Photographic Processes)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 1053866		19670104	GB	19640805
DE 1472772			DE	
US 3454400		19690708	US	19650803

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
GB 1053866	IC	G03C
	IPCI	G03C
US 3454400	IPCR	G03F0007-022 [I,A]; G03F0007-022 [I,C]
	NCL	430/193.000

AB Naphthoquinone diazide sulfonic esters of aromatic monohydroxy carboxylic esters of a type that when exposed to \*\*\*uv\*\*\* radiation will rearrange to give dihydroxybenzophenones, give, when dissolved in a solvent either alone or mixed with e.g. a novolak and coated on a support, printing plates needing only a short exposure. Thus, 43 g. \*\*\*resorcinol\*\*\* monobenzoate and 54 g. naphthoquinone-(1,2)-diazide-(2)-5-sulfonyl chloride are dissolved in 600 ml. dioxane and the soln. stirred at 20.degree. for 1 hr. while 300 ml. 10% aq. Na2CO3 is added, held at 40.degree. for 0.5 hr., and then poured into 4 l. water contg. 40 ml. concd. HCl. The ppt. is collected the following day, washed and dried at 45.degree. to give 67 g. yellowish brown ester, m. 136.degree.. A 2% soln. is prepd. in 2-ethoxyethanol and coated on an anodized Al plate which when dry is exposed 1 min. under a positive \*\*\*pattern\*\*\*,

developed with 3% aq. Na3PO4, desensitized, and inked for the press. The esters of Ph salicylate, yellow, m. 144.degree., p-octylphenol salicylate, yellow, m. 133.degree., and 4-tert-butylphenyl salicylate, yellow, m. 134.degree., are similarly prepd.

ST LITHOGRAPHIC PLATES POS WORKING; PLATES LITHOGRAPHIC POS WORKING; POS WORKING LITHOGRAPHIC PLATES; PRINTING PLATES LITHOGRAPHIC; ESTERS PRINTING PLATES

IT Lithography  
(plates, light sensitive compns. contg. hydroxy phenylbenzoate derivs.)

IT 29756-60-3P

RL: PREP (Preparation)

(formation in lithographic plate coatings on \*\*\*uv\*\*\* ir radiation)

IT 15834-62-5 15834-63-6 15991-73-8 41479-40-7

RL: USES (Uses)

(in lithographic printing plates)

L13 ANSWER 63 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1966:430104 CAPLUS

DN 65:30104

OREF 65:5605e-h

ED Entered STN: 22 Apr 2001

TI Light-sensitive polymers

PA Gevaert-Agfa N.V.

SO 24 pp.

DT Patent

LA Unavailable

IC G03F

CC 48 (Plastics Technology)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	NL 6511477		19660225	NL	
PRAI	GB		19640902		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
NL 6511477	IC	G03F
	IPCI	G03F

AB Films or coatings prepd. from a soln. of a suitable homopolymer or copolymer contg. coumarin become insol. when exposed to \*\*\*uv\*\*\* radiation. Owing to the possibility of protecting some areas before etching, these layers are useful in photogravure. Thus, a mixt. of 55 g. \*\*\*resorcinol\*\*\*, 67 g. malic acid, and 140 ml. H2SO4 was heated at 130.degree. until the foam disappeared. After cooling with ice and maintaining for 1 hr. at room temp., the mixt. was poured into ice water. After 2 hrs., the product was removed, poured into a mixt. of 400 ml. H2O and 200 ml. EtOH contg. activated C, which was boiled for 30 min. to give 7-hydroxycoumarin (I), m. 228.degree.. Then, 8.1 g. I was dissolved in 80 ml. PhNEt2 at 120.degree. and, after cooling to 100.degree. and adding 80 mg. m-dinitrobenzene, 6.34 g. acryloyl chloride was introduced. The mixt. was heated at 95.degree. for 15 min., cooled to 50.degree., and poured into 1 l. 2N HCl. The product was dissolved in Me2CO, pptd. in 1 l. 2N Na2CO3, washed, dissolved in Me2CO, pptd. again in 1 l. N HCl, washed, and dried in vacuo to give 7-acryloyloxy coumarin (II). A tube contg. 1 g. II, 1 g. Et acrylate, 20 mg. Bz2O2, and 20 ml. HCONMe2 was filled with N, sealed, and heated at 80.degree. for 6 hrs. to give a light-sensitive copolymer (III). A soln. of 125 my. III and 5 mg. Michler's ketone in 2.5 ml. butanone (IV) was coated on an Al plate and dried to give a 1-.mu. layer, which was exposed through a black-and-white photographic negative to the light of an 80-w. Hg lamp 15 cm. from the plate. After a 1-min. exposure, the plate was washed with IV to give an \*\*\*image\*\*\* with good contrast.

IT Light  
(-sensitive materials, 7-(acryloyloxy) coumarin-contg. polymers as)

IT Vinyl compound polymers  
(butyrals, reaction products with 6-(chlorosulfonyl) coumarin, light-sensitive)

IT Polymerization  
(of 7-(acryloyloxy) coumarin, alone and with Et acrylate)

IT Photogravure  
(plates, 7-(acryloyloxy) coumarin-contg. polymers in)

IT Printing

(plates, coumarin deriv. polymers for)

IT Esters  
(reaction products of poly-, with coumarin derivs., light-sensitive)

IT Epoxy resins  
Ethers  
(reaction products with coumarin derivs., light-sensitive)

IT Acrylic acid, ester with 7-hydroxycoumarin, homopolymer  
(light-sensitive)

IT 90-94-8, Benzophenone, 4,4'-bis(dimethylamino)- 100-10-7, Benzaldehyde,  
p-(dimethylamino)- 131-56-6, Benzophenone, 2,4-dihydroxy- 2124-31-4,  
Acetophenone, 4'-(dimethylamino)-  
(as photosensitizer for coumarin deriv. polymers)

IT 93-35-6, Coumarin, 7-hydroxy-, esters, polymers  
(light-sensitive)

IT 80-05-7, Phenol, 4,4'-isopropylidenedi-  
(polyesters, reaction products with coumarin derivs., light-sensitive)

IT 80-05-7, Phenol, 4,4'-isopropylidenedi-  
(polyethers, reaction products with coumarin derivs., light-sensitive)

IT 140-88-5, Acrylic acid, ethyl ester  
(polymerization, with 7-(acryloyloxy)coumarin to light-sensitive  
polymers)

IT 93-35-6, Coumarin, 7-hydroxy- 10543-44-9, Benzoic acid, m-sulfo-,  
m-ester with 7-hydroxycoumarin  
(prepn. of)

IT 10543-42-7, Coumarin, 6-(chlorosulfonyl)- 10543-43-8, Coumarin,  
6-(chloroformyl)- 10543-45-0, Coumarin, 6-[[3,5-  
bis(chloroformyl)phenoxy]sulfonyl]-  
(reaction products with polyesters, light-sensitive)

IT 10543-49-4, Benzenesulfonic acid, m-(chloroformyl)-, ester with  
7-hydroxycoumarin  
(reaction products with polyethers, light-sensitive)

IT 13002-96-5, Coumarin, 6-sulfo-, vinyl ester  
(reaction products with vinyl butyral polymers, light-sensitive)

L13 ANSWER 64 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1965:463722 CAPLUS

DN 63:63722

OREF 63:11753f-h,11754a-c

ED Entered STN: 22 Apr 2001

TI o-Aminobenzene diazo compounds containing an etherified hydroxyl group in  
para position with regard to the amino group, as photographic dyes

PA Chemische Fabriek L. van der Grinten N.V.

SO 37 pp.

DT Patent

LA Unavailable

CC 46 (Dyes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	BE 643153		19640730	BE	
	FR 1413878			FR	
	GB 1045242			GB	
	NL 288469			NL	

PRAI NL 19630201

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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GI For diagram(s), see printed CA Issue.

AB Compds. of the formula I show higher coupling activity, and form red to brown \*\*\*images\*\*\* with polyphenols, such as fluoroglucinol or \*\*\*resorcinol\*\*\*, having higher absorption for \*\*\*uv\*\*\* rays than the corresponding 2,5-dialkoxy compds., so that diazotype material sensitized with these compds. develop faster, and give copies with dyes absorbing \*\*\*uv\*\*\* rays better. Thus, white paper (80 g./m.2) pretreated with an aq. silica dispersion and dried, was sensitized with a liquid contg. 10 g. [2,5,4-AcMeN(MeO) (p-MeC6H4SO2NHH)C6H2N2]ZnCl3 (II), 8 g. tartaric acid, 4 g. boric acid, 600 cc. poly(vinyl acetate)dispersion (Vinnapas H.60), and 400 cc. water and dried. A second layer sensitive to light was applied with a liquid contg. 100 g. poly(vinyl acetate) (Vinnapas U.W.50) in 1000 cc. C2HCl3, and dried. A top layer was applied with a liquid contg. 5 g. 2,3-C10H6(OH)2, 20 g. non-colloidal silica, 46 g. RCONHCH2CH2OH (Nalcamine A.12), and 1000 cc. petr. ether, and dried.

This light sensitive material was exposed under a transparent drawing and developed over a warm roll at 140.degree., to give a red-brown

\*\*\*image\*\*\* . II was prepd. by treating 5,2-Cl(MeO)C<sub>6</sub>H<sub>3</sub>NH<sub>2</sub> with p-MeC<sub>6</sub>H<sub>4</sub>SO<sub>2</sub>Cl, nitrating, then treating the 5,2,4-Cl(MeO)(O<sub>2</sub>N)C<sub>6</sub>H<sub>2</sub>NHSO<sub>2</sub>C<sub>6</sub>H<sub>4</sub>Me-4 with MeNH<sub>2</sub>, and acetylating to give 5,2,4-AcMeN(MeO)(O<sub>2</sub>N)C<sub>6</sub>H<sub>2</sub>NHSO<sub>2</sub>C<sub>6</sub>H<sub>4</sub>Me-4, m. 190.degree., which was reduced catalytically and diazotized. Similarly prepd. were the I given in the table. Also prepd. were the ZnCl<sub>2</sub>- salts of (m.p. of nitro compd. given): N,N'-dimethyl-N,N'-bis(2-diazo-4-methoxy-5-benzoylaminophenyl)adipic acid diamide (229-31.degree.); 1 - [4-diazo-5-(N-acetyl-N-methylamino)-2-methoxyphenyl]-2-amino-4-imino-6-methyl-s-triazine(298-300.degree.); and N,N'-bis-[4-diazo-3-(N-acetyl-N-methylamino)-6-methoxyphenyl]urea (279-83.degree.). R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, m.p. of nitrobenzene deriv.; Me, Me, Bz, Et, 194-5.degree.; Me, C<sub>6</sub>H<sub>13</sub>, Bz, Me, 117-19.degree.; Bu, Me, Bz, Me, --; Me, C<sub>8</sub>H<sub>17</sub>, Ac, Et, 125-7.degree.; Et, Me, PhCH<sub>2</sub>CON, Me, 158.degree.; Me, OPh, Bz, Me, 132-4.degree.; Me, Me, Bz, Bu, 120-2.degree.; Me, Me, Et, Me, 202-3.degree.; Me, OEt, Bz, Pr, 124-6.degree.; Me, Me, Ac, p-ClC<sub>6</sub>H<sub>4</sub>, 210-12.degree.; Me, Me, Bz, Me, 206-8.degree.; Me, Me, Bz, p-ClC<sub>6</sub>H<sub>4</sub>, 182-4.degree.; Me, Me, Bz, cyclopentyl, 138-41.degree.

IT Diazotype process

(5-alkoxy-2,4-diamidobenzenediazonium compds. in)

IT Diazotype process

(thio ethers of benzenediazonium compds. in)

IT Benzenediazonium compounds, 2,2'-[adipoylbis(methylimino)]bis[4-benzamido-5-methoxy- chloride], compd. with ZnCl<sub>2</sub>

Benzenediazonium compounds, 2-(N-ethylacetamido)-5-methoxy-4-(2-phenylacetamido), chloride, compd. with ZnCl<sub>2</sub>

Benzenediazonium compounds, 4,4'-ureylenebis[5-methoxy-2-(N-methylacetamido)- chloride], compd. with ZnCl<sub>2</sub>

Benzenediazonium compounds, 4-(4-amino-2-imino-6-methyl-s-triazin-1(2H)-yl)-5-methoxy-2-(methylamino)-, chloride, compd. with ZnCl<sub>2</sub>

Benzenediazonium compounds, 4-(carboxyamino)-5-methoxy-2-(N-methylacetamido), chloride, Et ester, compd. with ZnCl<sub>2</sub>

Benzenediazonium compounds, 4-acetamido-5-(p-chlorophenoxy)-2-(N-methylacetamido)-, chloride, compd. with ZnCl<sub>2</sub>

Benzenediazonium compounds, 4-acetamido-5-ethoxy-2-(N-methylnonanamido)-, chloride, compd. with ZnCl<sub>2</sub>

Benzenediazonium compounds, 4-benzamido-2-(carboxyamino)-5-propoxy-, chloride, Et ester, compd. with ZnCl<sub>2</sub>

Benzenediazonium compounds, 4-benzamido-2-(carboxymethylamino)-5-methoxy-, chloride, benzyl ester compd. with ZnCl<sub>2</sub>

Benzenediazonium compounds, 4-benzamido-2-(N-butylacetamido)-5-methoxy-, chloride, compd. with ZnCl<sub>2</sub>

Benzenediazonium compounds, 4-benzamido-5-(cyclopentylloxy)-2-(N-methylacetamido)-, chloride, compd. with ZnCl<sub>2</sub>

Benzenediazonium compounds, 4-benzamido-5-(p-chlorophenoxy)-2-(N-methylacetamido)-, chloride, compd. with ZnCl<sub>2</sub>

Benzenediazonium compounds, 4-benzamido-5-butoxy-2-(N-methylacetamido)-, chloride, compd. with ZnCl<sub>2</sub>

Benzenediazonium compounds, 4-benzamido-5-ethoxy-2-(N-methylacetamido)-, chloride, compd. with ZnCl<sub>2</sub>

Benzenediazonium compounds, 4-benzamido-5-methoxy-2-(N-methylacetamido)-, chloride, compd. with ZnCl<sub>2</sub>

Benzenediazonium compounds, 4-benzamido-5-methoxy-2-(N-methylheptanamido)-, chloride, compd. with ZnCl<sub>2</sub>

Zinc chloride, compd. with 2,2'-[adipolybis(methylimino)]bis[4-benzamido-5-methoxybenzenediazonium chloride]

Zinc chloride, compd. with 4-(carboxyamino)-5-methoxy-2-(N-methylacetamido)benzenediazonium chloride, Et ester

Zinc chloride, compd. with 4-acetamido-5-ethoxy-2-(N-methylnonaamido)benzenediazonium chloride

IT 3994-01-2, s-Triazine, 4-amino-1,2-dihydro-2-imino-1-[2-methoxy-5-(methylamino)-4-nitrophenyl]-6-methyl- 3994-09-0, Carbanilide,

2,2'-dimethoxy-5,5'-bis(N-methylacetamido)-4,4'-dinitro- 4031-65-6,

Benzanilide, 2'-(cyclopentylloxy)-5'-(N-methylacetamido)-4'-nitro-

4031-66-7, o-Benzanisidide, 5'-(N-methylacetamido)-4'-nitro- 4031-67-8,

Acetanilide, 5'-acetamido-4'-(p-chlorophenoxy)-N-methyl-2'-nitro-

4031-68-9, Carbanilic acid, 5-benzamido-N-methyl-2-nitro-4-propoxy-, ethyl

ester 4031-70-3, Benzanilide, 2'-butoxy-5'-(N-methylacetamido)-4'-nitro-

4031-71-4, o-Acetanisidide, 5'-(N-ethylacetamido)-4'-nitro-2-phenyl-

4031-72-5, p-Nonanophenetidide, 5'-acetamido-N-methyl-2'-nitro-

4031-73-6, p-Heptananisidide, 5'-benzamido-N-methyl-2'-nitro- 4031-74-7,

o-Benzophenetidine, 5'-(N-methylacetamido)-4'-nitro 4031-85-0, Zinc chloride, compd. with 4-benzamido-5-methoxy-2-(N-methylheptanamido)benzenediazonium chloride 4031-86-1, Zinc chloride, compd. with 4-benzamido-5-(cyclopentyloxy)-2-(N-methylacetamido)benzenediazonium chloride 4031-87-2, Zinc chloride, compd. with 4-benzamido-5-(p-chlorophenoxy)-2-(N-methylacetamido)benzenediazonium chloride 4031-88-3, Zinc chloride, compd. with 4-benzamido-5-methoxy-2-(N-methylacetamido)benzenediazonium chloride 4085-65-8, Zinc chloride, compd. with 4-benzamido-2-(carboxyamino)-5-propoxybenzenediazonium chloride, Et ester 4085-66-9, Benzanilide, 2'-(p-chlorophenoxy)-5'-(N-methylacetamido)-4'-nitro-4085-69-2, Zinc chloride, compd. with 4-acetamido-5-(p-chlorophenoxy)-2-(N-methylacetamido)benzenediazonium chloride 4115-80-4, Zinc chloride, compd. with 4-(4-amino-2-imino-6-methyl-s-triazin-1(2H)-yl)-5-methoxy-2-(methylamino)benzenediazonium chloride 4135-06-2, Zinc chloride, compd. with 4-benzamido-2-(N-butylacetamido)-5-methoxybenzenediazonium chloride 4135-07-3, Zinc chloride, compd. with 2-(N-ethylacetamido)-5-methoxy-4-(2-phenylacetamido)benzenediazonium chloride 4135-08-4, Zinc chloride, compd. with 4-benzamido-5-butoxy-2-(N-methylacetamido)benzenediazonium chloride 4189-15-5, Zinc chloride, compd. with 4-benzamido-2-(carboxymethylamino)-5-methoxybenzenediazonium chloride, benzyl ester 4267-41-8, Zinc chloride, compd. with 4-benzamido-5-ethoxy-2-(N-methylacetamido)benzenediazonium chloride 4434-67-7, Zinc chloride, compd. with 4,4'-ureylenebis[5-methoxy-2-(N-methylacetamido)benzenediazonium chloride] 5059-72-3, Carbanilic acid, 5-benzamido-4-methoxy-N-methyl-2-nitro-, benzyl ester 6071-75-6, Carbanilic acid, 2-methoxy-5-(N-methylacetamido)-4-nitro-, ethyl ester 860388-21-2, Hexanedi-p-aniside, 5,5'-(N-methylacetamido)-N,N'-dimethyl-2',2'-dinitro-(prepn. of)

L13 ANSWER 65 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1965:433093 CAPLUS

DN 63:33093

OREF 63:5943h,5944a-c

ED Entered STN: 22 Apr 2001

TI Isolation and characterization of phenolic substances from the silkworm, Bombyx mori

AU Tomino, S.

CS Metropol. Univ., Tokyo

SO Journal of Insect Physiology (1965), 11(5), 581-90

CODEN: JIPHAF; ISSN: 0022-1910

DT Journal

LA English

CC 56 (General Biochemistry)

AB cf. CA 59, 3113h. Pupae of B. mori were homogenized with 0.1M KCN, centrifuged, filtered, and extd. with MeOH. Ion-exchange chromatography, using a Dowex-50 column, revealed 7 phenolic substances: 2 glucosides of o-diphenol, 3 o-diphenols, tyrosine, and 3-hydroxykynurenine. Purification of the glucosides on a charcoal column and paper chromatography of the eluates before and after treatment with .beta.-glucosidase, indicated that one was the .beta.-glucoside of o-diphenol. The other gave a blue color with 2,6-dichloroquinone-4-chlorimide, indicating that the glucose was bound to the 4 position of o-diphenol. Studies of the hydrolysis products and comparison with the phenolic glucoside from Drosophila melanogaster (mutant claret) showed that it was N-acetyl-3,4-dihydroxy-.beta.-phenylethylamine-4-O-.beta.-glucoside. One of the diphenols which was present in low concn. may have been dihydroxyphenol. Another was 3,4-dihydroxyphenylalanine (I), as shown by charcoal purification, paper chromatography, and paper electrophoresis. The 3rd diphenol was purified on a Dowex-50 column. The \*\*\*uv\*\*\* spectrum and electrophoretic mobility were similar to, but different, from I and its color with ninhydrin suggested that it contained an imino group. Dinitrophenyl derivs. and treatment with K3Fe(CN)6 suggested it was an N-substituted I with the same side-chain skeleton as I. Most of the exts. were prepd. from prepupae, but exts. of other developmental stages gave similar chromatographic \*\*\*patterns\*\*\*.

IT Phenols

(of silkworms)

IT Silkworms

(phenolic substances of)

IT 108-46-3, \*\*\*Resorcinol\*\*\* 120-80-9, Pyrocatechol 484-78-6,

Alanine, 3-(3-hydroxyanthraniloyl)- 2400-71-7, Glucoside,



o-hydroxyphenyl, .beta.-D- 3225-29-4, Hydroquinone, semiquinone  
(from silkworm pupae)  
IT 60-18-4, Tyrosine 63-84-3, Alanine, 3-(3,4-dihydroxyphenyl)-  
(in silkworm)  
IT 2474-06-8, Acetamide, N-[4-(.beta.-D-glucosyloxy)-3-hydroxyphenethyl]-  
2474-06-8, Glucoside, 4-(2-acetamidoethyl)-2-hydroxyphenyl, .beta.-D-  
(prepn. of)

L13 ANSWER 66 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1965:421656 CAPLUS

DN 63:21656

OREF 63:3812c-e

ED Entered STN: 22 Apr 2001

TI Diazotype material capable of forming two different colors with the same  
developer

PA Cellophane S.A.

SO 6 pp.

DT Patent

LA Unavailable

IC G03C; F

CC 11 (Radiation Chemistry and Photochemistry)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	FR 1388080		19650205	FR 1963-958650	19631227
PRAI	FR		19631227		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
FR 1388080	IC	G03C; F
	IPCI	G03C
	IPCR	G03C0005-18 [I,A]; G03C0005-18 [I,C]

AB Light-sensitive diazonium salt-contg. films are prep'd. which can give  
different colored copies by using the same developer. The developer is an  
aq. soln. of \*\*\*resorcinol\*\*\* (I) and phloroglucinol (II). The  
content of I in the mixt. can vary between 40 and 60%. The film contains  
one of the diazonium salts in the original patent, which couples at  
different speeds with I and II. The speed of coupling depends on the pH,  
and det. the final color of the copy. Thus, a soln. of 0.5 g. tartaric  
acid, 18 g. of the ZnCl<sub>2</sub> double salt of N-methyl-N-benzyl-4-amino-3-  
ethoxybenzene diazonium chloride, 30 g. Na 1,3,6-naphthalenetrisulfonate,  
and 0.2 g. saponin in 1000 cc. of water, is coated on base paper of  
approx. 80 g./m<sup>2</sup>, about 10 cc. of sensitizing soln. per sq. m.). After  
drying and exposure to \*\*\*uv\*\*\* light, the \*\*\*image\*\*\* is  
developed with a soln. consisting of 70 g. K<sub>2</sub>B<sub>4</sub>O<sub>7</sub>, 5 g. I, 5 g. II, and 1  
g. K hydroquinonesulfonate, made up to 1 l. with water. The copy is  
brown. If, however, 3.5 g. or 10 g. of tartaric acid is used to make the  
sensitizing soln., the copies will be brown-black and black, resp.

IT Diazotype process  
(light-sensitive material for, forming two different colors with same  
developer)

IT Zincate, Zn<sub>4</sub>Sb<sub>3</sub>, tetrachloro-, 4-(benzylmethylamino)-3-  
ethoxybenzenediazonium  
(as diazotype compn. forming two different colors with one developer)

IT 4421-50-5, Benzenediazonium, 3-ethoxy-4-[methyl(phenylmethyl)amino]-,  
(T-4)-tetrachlorozincate(2-) (2:1)  
(as diazotype compn. forming two different colors with same developer)

IT 4364-21-0, o-Phenetidine, N-cyclohexyl- 4364-22-1, o-Phenetidine,  
N-cyclohexyl-N-methyl-  
(prepn. of)

L13 ANSWER 67 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1965:406694 CAPLUS

DN 63:6694

OREF 63:1209h,1210a-d

ED Entered STN: 22 Apr 2001

TI Spectrographic determination of rare earth elements

AU Kul'skaya, O. A.

SO Tr. Inst. Geol. Nauk, Akad. Nauk Ukr. SSR, Ser. Petrogr., Mineralog. i  
Geokhim. (1964), No. 21, 76-120

DT Journal

LA Russian

CC 2 (Analytical Chemistry)  
 AB Flame-photometric, spectrophotometric, x-ray spectrographic, fluorescent, luminescent, neutron activation, mass spectroscopic, chromatographic, polarographic, and emission spectrographic detns. of rare earth elements are compared. The advantages of the emission spectrographic analysis are: speed, high sensitivity, sufficient accuracy, and universality. The extreme complexity of the rare earths spectra necessitates a spectrograph of large dispersion such as KS-55, KSA-1 (at 2500-3500 A.), ISP-51 with the glass optics (in the visible region), and \*\*\*grating\*\*\* instruments DFS-3 and DFS-13. D.c., a.c., and high-frequency arc excitation are employed. For the detn. of the rare earth elements, Ce, La, Sm, Nd, Y, Yb, Ba, Fe, Mo, Sr, Mg, Sc, and Zr can be used as an internal standard. In this paper Zr is proposed as an internal standard in the \*\*\*uv\*\*\* region. The anal. line pairs are as follows: La 2610.34/Zr 2567.64, La 3245.12/Zr 3182.86, Y 3179.42/Zr 3182.858, Y 3200.27/Zr 3182.858, Nd 3328.27/Zr 3182.858, Nd 3328.27/background, Sm 3183.92/Zr 3182.858, Sm 3183.92/background, Pr 3172.27/Zr 3182.858, Lu 2615.42/Zr 2567.64, Tb 3324.40/Zr 3182.858, Ce 3063.01/Zr 3182.858, Ce 3063.01/background, Gd 3032.85/Zr 3182.858, Gd 2796.94/Zr 2722.61, Er 2910.36/Zr 2722.61, Eu 2727.78/Zr 2722.61, Yb 2891.38/Zr 2722.61, Yb 3289.37/Zr 3182.858, Dy 3319.89/Zr 3182.858, Tm 2869.22/Zr 2722.61, and Ho 3425.35/Zr 3182.858 A. Content of 1% and less of the base elements causes no interferences, hence, the samples are dild. (1:10-1:20) with C powder. The C powder is also added to decrease the effect of sample compn. and to stabilize burning of the arc. The volatilization curves corresponding to volatilization direct from minerals and to that from the total rare earth oxides are given. For the detn. of the rare earth elements their oxides were purified to remove Th (interference). Standards and samples were mixed (1:10) with the C powder and the resulting mixt. was mixed (1:1) with the internal standard prepd. from ZrO<sub>2</sub>; 3 series of standards were used. A KSA-1 spectrograph was used at 2500-3500 A. under the following conditions: crater, 2.5 mm. deep and 2.5 mm. in diam.; d.c. arc current 10 amp.; slit 0.008 mm.; arc gap 2 mm.; exposure time 3 min. Procedure applies to the following concns.: La 0.1-3, Ce 0.3-3, Nd 0.3-3, Pr 0.3-1, Sm 0.1-1, Gd 0.03-1, Y 0.03-3, Er 0.01-0.5, Yb 0.01-0.5, Eu 0.01-0.5, Dy 0.03-1, Tb 0.03-1, Tm 0.03-1, Ho 0.03-1, and Lu 0.01-1%. The relative error in the detns. averages  $\pm .12$  for Ce and Nd and  $\pm .5\%$  for the other rare earth elements. 100 references.

IT Rare earth metals  
 (analysis, detn., spectrographic)  
 IT 7440-00-8, Neodymium  
 (analysis, 4-(2-pyridylazo) \*\*\*resorcinol\*\*\* in, spectrographic)  
 IT 7429-91-6, Dysprosium 7439-91-0, Lanthanum 7439-94-3, Lutetium  
 7440-10-0, Praseodymium 7440-19-9, Samarium 7440-27-9, Terbium  
 7440-30-4, Thulium 7440-45-1, Cerium 7440-52-0, Erbium 7440-53-1,  
 Europium 7440-54-2, Gadolinium 7440-60-0, Holmium 7440-64-4,  
 Ytterbium 7440-65-5, Yttrium  
 (analysis, detn., spectrographic)

L13 ANSWER 68 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1965:48377 CAPLUS

DN 62:48377

OREF 62:8567g-h,8568a

ED Entered STN: 22 Apr 2001

TI Transparent diazo paper

IN van Groenland, Adrianus J. P.

PA N. V. Lichtdrukpapierfabriek "De Atlas"

SO 4 pp.

DT Patent

LA Unavailable

IC G03C

CC 11 (Radiation Chemistry and Photochemistry)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI NL 120105		19641215	NL	19621115

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
NL 120105	IC	G03C
	IPCI	G03C

AB Filling the pores of filler-free paper with a transparentizing agent

reduces its transmissivity for gases (NH<sub>3</sub> vapor) which is undesirable in case of diazo materials sensitized on both sides to obtain max. \*\*\*uv\*\*\* opacity for use as intermediate masters. The gas permeability, as detd. by the Bekk meter, should not exceed 50 sec. A compromise is achieved by applying the transparentizing agent in limited concns. Suitable for papers in the wt. range of 30-60 g./sq. m. are mixts. of 10-14% methylstyrene with 90-86% kerosene and of 45% C.T.S. agent (U.S. 2,616,815, CA 47, 1390i) with 55% CCl<sub>4</sub>. In an example, the paper is sensitized with a conventional diazo soln. contg. \*\*\*resorcinol\*\*\* as the coupler on one side and 2,3-dihydroxynaphthalene-6-sulfonic acid on the other, for a brown and blue \*\*\*image\*\*\*, resp.

IT Kerosene  
(diazotype process paper contg. methylstyrene and, for transparency)  
IT Diazotype process  
(paper for, contg. methylstyrene mixt. with kerosene, for transparency)  
IT 25013-15-4, Styrene, ar-methyl-  
(diazotype process paper contg. kerosene and, for transparency)

L13 ANSWER 69 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1963:76692 CAPLUS

DN 58:76692

OREF 58:13122e-g

ED Entered STN: 22 Apr 2001

TI 4-(2-Pyridylazo) \*\*\*resorcinol\*\*\*, a sensitive reagent for the photometric determination of indium

AU Kish, P. P.; Orlovskii, S. T.

CS State Univ., Uzhgorod

SO Zhurnal Analiticheskoi Khimii (1962), 17, 1057-62

CODEN: ZAKHA8; ISSN: 0044-4502

DT Journal

LA Unavailable

CC 2 (Analytical Chemistry)

AB The molar absorptivity at the max. (500 m.mu.) is 32.8 .times. 10<sup>3</sup>. The In-reagent complex follows Beer's law in the range of 5-120 .gamma. In/25 cc. Fe(III), Fe(II), Co, Ni, V(V), Zr, Bi Sn(II), F-, NO<sub>2</sub>-, P<sub>2</sub>O<sub>7</sub><sup>4-</sup>, and C<sub>2</sub>O<sub>4</sub><sup>2-</sup> interfere; Cd, Zn, Al, Mn, Cr, Cu, and Pb do not. Decomp. 0.1-1 g. of the sample in a mixt. of HCl and HNO<sub>3</sub>, evap. to dryness, add 3 cc. concd. HCl, 0.1 g. N<sub>2</sub>H<sub>4</sub>.HCl, 0.1 g. KBr, and evap. nearly to dryness. Dissolve in dil. HCl, ppt. Pb with H<sub>2</sub>SO<sub>4</sub>, and evap. to SO<sub>3</sub> fumes. Filter, wash with 1% H<sub>2</sub>SO<sub>4</sub>, to the filtrate add 2 cc. concd. HNO<sub>3</sub>, boil, ppt. trivalent metals with 25% NH<sub>4</sub>OH, filter, and wash with 1% NH<sub>4</sub>Cl. Dissolve the ppt. in HCl, ppt. again, and filter. Dissolve the ppt. in 3.5N H<sub>2</sub>SO<sub>4</sub>, and dil. to 25 cc. with 3N H<sub>2</sub>SO<sub>4</sub>. Place a 10-cc. aliquot in a separatory funnel, add 10 cc. H<sub>2</sub>O, 0.1 g. Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> to \*\*\*mask\*\*\* Cu, 5 g. KI, and ext. In twice with 20 cc. Et<sub>2</sub>O. Wash the combined exts. with 1.5N HI, add 5 cc. H<sub>2</sub>O, and evap. Et<sub>2</sub>O on a water bath. Filter, add 2 cc. 2 .times. 10-3M reagent, dil. to 25 ml. with a pH 3 buffer, and det. photometrically.

IT Indium ores  
(indium detn. in)  
IT Spectra, visible and \*\*\*ultraviolet\*\*\*  
(of indium complex with 4-(2-pyridylazo) \*\*\*resorcinol\*\*\* )  
IT Indium compounds, [4-(2-pyridylazo)resorcinolato]indium(III) ion  
(spectrum of)  
IT 7440-74-6, Indium  
(analysis, detn., 4-(2-pyridylazo) \*\*\*resorcinol\*\*\* in)  
IT 1141-59-9, \*\*\*Resorcinol\*\*\*, 4-(2-pyridylazo)-  
(in indium detn.)  
IT 1141-59-9, 1,3-Benzenediol, 4-(2-pyridylazo)-  
(spectrum of)

L13 ANSWER 70 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1961:135958 CAPLUS

DN 55:135958

OREF 55:25562d-f

ED Entered STN: 22 Apr 2001

TI Photosensitive resinous compositions and photographic elements

IN Printy, John O.; Wagner, Edward Wangelin

PA Monsanto Chemical Co.

DT Patent

LA Unavailable

CC 5 (Photography)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2990281		19610627	US 1956-628493	19561217

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2990281	IPCR	C08F0008-00 [I,A]; C08F0008-00 [I,C]; C08F0022-00 [I,A]; C08F0022-00 [I,C]; G03C0001-053 [I,A]; G03C0001-053 [I,C]; G03F0007-016 [I,C]; G03F0007-021 [I,A]; G03F0007-038 [I,A]; G03F0007-038 [I,C]; G03F0007-04 [I,A]; G03F0007-04 [I,C]
	NCL	430/270.100; 430/140.000; 430/176.000; 430/274.100; 430/289.100; 430/913.000; 522/032.000; 522/066.000; 522/153.000; 522/901.000; 524/096.000; 524/099.000; 524/213.000; 524/217.000; 524/257.000; 524/258.000; 524/398.000; 524/403.000; 524/407.000; 524/428.000; 525/327.700; 525/330.100; 525/384.000

AB Photosensitive materials, such as diazo compds., Ag salts, dichromates, and Fe systems can be incorporated into H<sub>2</sub>O-insol. vinylidene resinous copolymers to give stable, tough, abrasion-resistant photosensitive compns. The vinylidene copolymers must contain both carboxylic acid and ester groups. Thus, 50 parts of a copolymer from equal mol. proportions of vinyl acetate and maleic anhydride, in which 20% of the carboxy groups was esterified with MeOH, and 6 parts bis(2-ethylhexyl)phthalate were dissolved in 450 parts of MeCOEt. Five vols. of this soln. was mixed with 1 vol. of a 3.4% soln. of p-diethylaminobenzenediazonium fluoborate and further dild. for spraying onto polyester glass cloth. A sharp black \*\*\*image\*\*\* was obtained after exposure to \*\*\*ultraviolet\*\*\* light and development with an aq. soln. of 1 part \*\*\*resorcinol\*\*\* and 5 parts Na<sub>2</sub>CO<sub>3</sub>.

IT Photography  
(emulsions and sensitive materials or layers for, from maleic anhydride partially esterified polymers with vinyl acetate)

IT Diazotype process  
(light-sensitive materials for, maleic anhydride partially esterified polymers with vinyl acetate)

IT Photoduplication  
(maleic anhydride partially esterified polymers with vinyl acetate as light-sensitive compns. for)

IT 9011-07-8, Maleic anhydride, polymer with vinyl acetate  
(light-sensitive compns. contg. partially esterified)

IT 700365-14-6, Vinyl acetate, polymer with maleic anhydride  
(partially esterified)

L13 ANSWER 71 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1961:123431 CAPLUS

DN 55:123431

OREF 55:23170f-h

ED Entered STN: 22 Apr 2001

TI Spectrometric determination of carbon and phosphorus in steels and cast irons without special atmospheres

AU Giavino, A.

CS Optica S.p.A., Milan

SO Metallurgia Italiana (1961), 53, 229-32

CODEN: MITLAC; ISSN: 0026-0843

DT Journal

LA Unavailable

CC 7 (Analytical Chemistry)

AB Sufficient dispersion and resolution for C and P analysis in Fe alloys can be obtained with a plane \*\*\*grating\*\*\* of 1200 lines/mm. in stigmatic mounting on a 2-m. spectrometer without necessitating a special protective atm. The spectral range is located in conventional \*\*\*ultraviolet\*\*\* wave lengths, C 2296.89, Fe 2739.5, Mn 2705.7, Si 2516, P 2149.11, Cu 2218.1, Ni 2253.9, Cr 2677.1, Al 3082.1, and Sn 3262.3 A. Special attention is given to the optimum conditions of excitation and to the counterelectrode (Ag for C detn.). With good samples, up to 4.5% C in cast iron can be detd.

IT \*\*\*Resorcinol\*\*\*, 5-methyl-2(or 4)-(p-nitrophenylazo)-  
(in beryllium detn.)

IT 7439-89-6, Iron  
(alloys, analysis of, for C and P)

IT 7440-44-0, Carbon 7723-14-0, Phosphorus  
(analysis, detn. in Fe and steel)  
IT 7440-41-7, Beryllium  
(analysis, detn. in air)  
IT 7439-89-6, Iron  
(analysis, detn. of C and P in cast iron and steel)

L13 ANSWER 72 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1960:879 CAPLUS  
DN 54:879  
OREF 54:139g,140a-c  
ED Entered STN: 22 Apr 2001  
TI Photothermographic plates stabilized with \*\*\*resorcinol\*\*\*  
monobenzoate  
IN Fuchsman, Charles H.; Charnas, Lawrence I.; Elliott, Stanley B.  
PA Ferro Corp.  
DT Patent  
LA Unavailable  
CC 5 (Photography)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2905554		19590922	US 1957-679095	19570819

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2905554	IPCR	G03C0001-73 [I,A]; G03C0001-73 [I,C]
	NCL	430/270.100; 430/281.100; 430/285.100; 430/330.000; 430/353.000; 430/495.100; 430/907.000; 430/908.000; 430/909.000; 430/910.000; 430/911.000

AB Poly(vinyl chloride) (I) 100, ZnO 2, 1,4-naphthoquinone (II) 2,  
\*\*\*resorcinol\*\*\* monobenzoate (III) 0.6, bis(2-ethylhexyl) phthalate  
(IV) 35, mineral spirits (V) 24, and Me iso-Bu ketone (VI) 6 g. were  
ball-milled for 24 hrs. The liquid produced was drawn down on a polished  
Al sheet. The diluent was evapd. in 2 min. at 120.degree.F. The  
plasticizer was dissolved by 2 min. heating at 300-50.degree.F. The  
sensitized plate was exposed under a negative for 60 sec. under  
\*\*\*ultraviolet\*\*\* illumination of 120 mw./sq. cm. incident energy. It  
was then developed at 320.degree.F. for 6 min. III stabilizes the  
produced \*\*\*image\*\*\* d. against fading in post-development  
illumination. I may be replaced by cellulose acetate, alkyd resins, ethyl  
cellulose, poly(vinyl acetate), vinyl chloride-acetate copolymers, or  
vinyl chloridevinylidene chloride copolymers. II may be replaced by  
anthraquinone or 2-methylantraquinone. IV may be replaced by BuOAc.  
Instead of combinations of IV, V, and VI, other combinations including  
chloroparaffins, Zn naphthenate, benzene, or toluene may be used. Inert  
solids, e.g. mica, talc, SiO2, TiO2, or diatomaceous earth and (or) active  
pigments like CaCO3 or basic Pb sulfate may be admixed for use in  
half-toning the \*\*\*images\*\*\*.

IT Photothermography  
(plates, stabilization with CeF3 or \*\*\*resorcinol\*\*\* monobenzoate)  
IT 136-36-7, \*\*\*Resorcinol\*\*\*, benzoate  
(in photothermographic plate stabilization)

L13 ANSWER 73 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1959:93399 CAPLUS  
DN 53:93399  
OREF 53:16776b-f  
ED Entered STN: 22 Apr 2001  
TI Negative diazosulfonate foil  
IN Herrick, Clifford E., Jr.; Balk, Ann H.  
PA General Aniline & Film Corp.  
DT Patent  
LA Unavailable  
CC 5 (Photography)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2854338		19580930	US 1955-495358	19550318

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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US 2854338 IPCR C25D0003-56 [I,C]; C25D0003-58 [I,A]; G03C0001-52 [I,C]; G03C0001-56 [I,A]  
NCL 430/164.000; 430/147.000; 430/148.000; 430/188.000; 524/032.000; 524/037.000; 524/039.000; 524/041.000; 525/207.000; 534/558.000; 534/683.000; 534/738.000

AB The title foil is prepd. by coating a transparent base with a layer of a maleic anhydride-vinyl compd. copolymer mixed with a compatible hydrophobic resin, treating the copolymer to avoid splitting, and sensitizing the resulting H2O-sensitive layer with a coating soln. The copolymer treatment consists of partial amidification of the maleic residues. The coating soln. consists of a mixt. of a diazosulfonate and a coupling component. The resulting plate contains a low-cost, easily processed, dimensionally stable, H2O-sensitive layer which permits ready wash-out of chemicals. The plates are easily handled when wet and can be dried rapidly after processing. Thus, a cellulose acetate (I) base was coated with a soln. of 6 g. poly(vinyl methyl ether)-maleic anhydride copolymer (II), 14 g. I, 30 g. methyl Cellosolve (III), and 210 cc. Me2CO. The layer was dried, exposed several times to NH3, aired, and sensitized with a soln. of Na p-methoxybenzenediazosulfonate 4.8, 0-sulfobenzaldehyde Na salt 3, phloroglucinol (IV) 3.5, iso-PrOH 2 g., and H2O to make 100 cc. After exposure to \*\*\*ultraviolet\*\*\* light (1-3 min.) through a neg. original, the plate was exposed to NH3, yielding a sepia \*\*\*image\*\*\*. After a 1-2-min. washing in warm H2O, numerous reprints of good quality could be made with little or no degeneration of the intermediate. Triacetyl cellulose can be used as the base instead of I. Instead of the prime layer contg. the II, the prime layer of 2.5 g. of a poly(vinyl isobutyl ether)-maleic anhydride copolymer, 2.5 g. medium-viscosity poly(vinyl acetate), 35 cc. BuOAc, and 5 cc. III can be used. Hydrolysis of the layer is affected by immersion in 3% aq. HOC2H4NH2. An alternate sensitizing soln. is made by combining Na p-ethoxybenzenediazosulfonate 6, \*\*\*resorcinol\*\*\* 4, IV 0.25, citric acid 1, sulfosalicylic acid 1, ZnCl2 4, (NH2)2CS 4, iso-PrOH 0.11 g., and 100 cc. H2O. After exposure and processing with NH3 and H2O, a good quality sepia \*\*\*image\*\*\* with excellent max. d. is formed.

IT Diazotype process  
(plates for, with polymer coating and diazosulfonate sensitizers)

IT Vinyl compounds, polymers  
(with maleic anhydride, NH3-treated, diazotype plates coated with)

IT Diazosulfonates  
(sensitizers for diazotype plates)

IT 26298-64-6, Ether, isobutyl vinyl, polymer with maleic anhydride  
(NH3-treated, diazotype plates coated with)

IT 108922-33-4, Benzenesulfonic acid, o-formyl-, sodium salt, phenylhydrazone  
(as stabilizer in diazotype process)

IT 9011-16-9, Ether, methyl vinyl, polymer with maleic anhydride  
(in diazotype printing plate manuf.)

IT 5354-81-4, Benzenediazosulfonic acid, p-methoxy-, sodium salt 5446-10-6, Benzenediazosulfonic acid, p-ethoxy-, sodium salt  
(in diazotype process)

IT 108-73-6, Phloroglucinol  
(in diazotype process as coupler)

IT 108-31-6, Maleic anhydride  
(polymers of, with vinyl compds., NH3-treated, diazotype plates coated with)

L13 ANSWER 74 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1959:15871 CAPLUS  
DN 53:15871  
OREF 53:2905i,2906a-e  
ED Entered STN: 22 Apr 2001  
TI Photographic color transparencies for 3-dimensional viewing containing oriented poly(vinyl alcohol)  
IN Mahler, Joseph  
PA American Optical Co.  
DT Patent  
LA English  
CC 5 (Photography)  
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2854335		19580930	US 1952-307235	19520830

CLASS

US 2854335 IPCR G03B0021-54 [I,C]; G03B0021-64 [I,A]  
NCL 430/141.000; 359/465.000; 359/489.000; 359/490.000;  
359/494.000; 430/363.000; 430/365.000; 430/366.000;  
430/494.000

AB Beginning with cyan, yellow, and magenta master color sepn. positives which are pairs of mirror \*\*\*images\*\*\* stereoscopically complimentary, a multistep process is described for successively treating a single film of poly(vinyl alc.) (or other birefringent material), whose mols. are highly oriented 45.degree. to the horizontal, on a cellulose-ester base, so that full-color transparencies (I) are produced. Then the film is folded in half on its vertical axis and secured to give 90.degree. polarization differences between the front and rear matched stereoscopic \*\*\*images\*\*\*. All of the processing solns. are high, either in NaCl and (or) NaH<sub>2</sub>PO<sub>4</sub>, Na<sub>2</sub>SO<sub>4</sub>, and KCl, or in one of the lower alcs., to prevent soln. of the oriented poly(vinyl alc.). Wide ranges of concn. of components are indicated. After pretreating in a soln. of 90 cc. alc. (70-90) and 10 cc. H<sub>2</sub>O (10-30), I is immersed for 2 min. (1-5) at approx. 70.degree.F. in a sensitizing soln. of 10 g. (5-30) Naphthanil Diazo Blue B salt (dianacitine) and 55 g. (10-70) NaH<sub>2</sub>PO<sub>4</sub> in 250 cc. H<sub>2</sub>O. This introduces within the poly(vinyl alc.) layer a dye-former labile to \*\*\*ultraviolet\*\*\* light shone upon it through the cyan master after salts have been washed from I in a 5-sec. bath of 200 cc. alc. in 50 cc. (25-50) H<sub>2</sub>O, and after wiping and drying for 1 min. The exposed I is then placed in a cyan coupling soln. which is high in salts (25%), dil. in NaOH (0.4%), and about 2% in SS acid (1-amino-8-naphthol-2,4-disulfonic acid) (or S acid or J acid), for 2 min. After washing 5 sec. in 25 g. % NaCl soln. (II), the cyan \*\*\*image\*\*\* (from coupler plus undecompd. dye-former) is toned a denser blue in a bath of 10 g. CuCl<sub>2</sub> in 250 cc. II for at least 1 min. and is then rinsed in II. Similarly, for yellow, I is again sensitized the same way, exposed through the yellow master, and coupled in an alk. saline soln. about 1% in phenol (or salicylic acid or 3-methyl-1-phenyl-5-pyrazolone). Rinsing and toning as above densifies the yellow. Again, for magenta, the sensitizing is repeated, exposure is made through the magenta master, and coupling is done in a less alk. (0.2%) saline (25%) soln. (250 cc.) plus 15 cc. alc. contg. 0.5 cc. m-aminophenol (or \*\*\*resorcinol\*\*\*). Rinsing and toning as before shift the rose color to a reddish blue. Lacquering, cross-linking, etc., are optional further processes. Several mech. variations are described, as well as additive black-and-white pictures (from 1 master but 3 successive couplings and sensitizings, etc.). Projection refinements for 3-dimensional viewing are discussed. Transmission spectra for the 3 colors, before and after toning, are shown as plotted curves.

IT Photographic development  
(color, of transparencies contg. oriented vinyl alc. polymers)

IT Photography, color  
(stereoscopic, transparencies for, poly(vinyl alc.) in)

L13 ANSWER 75 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1958:92648 CAPLUS

DN 52:92648

OREF 52:16280a-i,16281a-c

ED Entered STN: 22 Apr 2001

TI Thermal decomposition of crystalline tertiary butyl N-methyl-N-(p-nitrophenyl)peroxycarbamate

AU Pedersen, C. J.

CS E. I. du Pont de Nemours & Co. Inc., Wilmington, DE

SO Journal of Organic Chemistry (1958), 23, 255-61

CODEN: JOCEAH; ISSN: 0022-3263

DT Journal

LA Unavailable

CC 10E (Organic Chemistry: Benzene Derivatives)

AB Decomposition of cryst. tert-butyl N-methyl-N-(p-nitrophenyl)peroxycarbamate (I) at 30.degree. proceeds by 2 different mechanisms: about 67% by an intramol. concerted reaction, giving CO<sub>2</sub>, N-methylene-p-nitroaniline (II), and Me<sub>3</sub>CHO (III); the remainder by a homolytic scission followed by partial recombination of free radicals to give CO<sub>2</sub> and O-(tert-butyl)-N-(p-nitrophenyl)hydroxylamine (IV). II is rapidly converted by atm. moisture to HCHO and N,N'-methylenebis-(p-nitroaniline) (V). This behavior is contrasted to that of cryst. tert-butyl N-(p-nitrophenyl)peroxycarbamate (VI). The action of these

comps. in aromatic solvents and PhCH:CH<sub>2</sub> (VII) is briefly discussed. The material balance for the decompn. of cryst. I in a representative expt. is shown as follows (products, wt. in g., mole .times. 10<sup>3</sup>, % yield, and remarks given): I, 2.000, 7.46, -, 18 ml. of sample; CO<sub>2</sub>, 0.297, 6.74, 90, identified by mass spectrography and x-ray \*\*\*pattern\*\*\* of BaCO<sub>3</sub>; III, 0.343, 4.64, 62, identified by mass spectrography; Me<sub>2</sub>C:CH<sub>2</sub>, 0.0013, 0.022, 0.3, identified by mass spectrography; residue after high evacuation, 1.277, -, 64, 2 ml. vol. of residue, 5.98 .mu. band present in the infrared, no peroxide value; the following products recovered after 3 days exposure to moisture; HCHO, -, -, -, identified by odor and alk.

\*\*\*resorcinol\*\*\* test; V, 0.719, 2.50, 33.5, identified by analysis, m.p., and x-ray diffraction; O-tert-butyl ether of N-methyl-N-(p-nitrophenyl)hydroxylamine (VIII), 0.546, 2.44, 32.7, structure established by analysis, physical properties, and conversion to N-methyl-N-(p-nitrophenyl)hydroxylamine (IX) with concn. H<sub>2</sub>SO<sub>4</sub>. The exptl. procedure is as follows. I placed in a vacuum tight glass system at 30.degree., protected against light, evacuated, closed off at 0.1 mm., and the rate of gas evolution measured during the following 7 days gave 185 ml. at 30.degree./760 mm. The rate of gas evolution was plotted against time. The compn. of the gases was detd. by a mass spectrograph and found to be 90.8% CO<sub>2</sub>, 8.9 g. III, and 0.3 g. Me<sub>2</sub>C:CH<sub>2</sub>. No trace of CH<sub>4</sub>, C<sub>2</sub>H<sub>6</sub>, HCHO, or Me<sub>2</sub>CO was found. The residue was submitted to a stream of N at 50% humidity for 3 days and the sample became closely cryst. and increased 10 fold in vol., and HCHO was evolved, the spectrum at the end of 3 days no longer had a band at 6 .mu.. The moist residue was treated with cold C<sub>6</sub>H<sub>6</sub> and sepd. into sol. and insol. fractions, the insol. portion was found to be V and the C<sub>6</sub>H<sub>6</sub>-sol. compd. VIII. Isolated compds. were (compd., and m.p. given): p-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>NH<sub>2</sub>, (IX), 147.degree.; p-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>NHMe (X), 151-2.degree.; V, 230-2.degree.; VIII, 138-40.degree.. The

\*\*\*ultraviolet\*\*\* absorption spectra for the isolated compds. are given together with the infrared absorption bands and the x-ray diffraction angles. The C<sub>6</sub>H<sub>6</sub>-sol. fraction evapd. to dryness gave an oil which gradually solidified, m. 138-40.degree.. The analysis and infrared spectrum are in agreement with the proposed structure of VIII. VIII

\*\*\*ultraviolet\*\*\* spectrum is similar to that of IV, the univalent anion is red and the divalent anion is yellow; VIII is insol. in alk. and forms N-methyl-N-(p-nitrophenyl)hydroxylamine (XI). H<sub>2</sub>SO<sub>4</sub> may have caused the rearrangement of XI to N-methyl-2-hydroxy-4-nitroaniline (XII), but the

\*\*\*ultraviolet\*\*\* spectrum of 2-hydroxy-4-nitroaniline is entirely different from that of XII. I (75 ml. of a 0.025 molar soln.) in cumene heated 72 hrs. at 51.degree. with a slow stream of N being passed to a Ba(OH)<sub>2</sub> trap, the BaCO<sub>3</sub> formed in this time accounted for 90% of the CO<sub>2</sub> and the soln. contained 0.02 g. V, 0.251 g. X, 0.07 g. VIII, and much less than the expected amt. of (PhMe<sub>2</sub>C)<sub>2</sub>. The decompn. in this case is mainly by route 1. VI (100 ml. of a 0.037 molar soln.) in cumene heated 21 days gave BaCO<sub>3</sub> which accounted for only 28% of CO<sub>2</sub>, the temp. was raised to 80.degree. and heating continued 3 more days to give a total of 87% CO<sub>2</sub>; the soln. contained 0.233 g. IX and a considerable amt. of IV, and gave no red color with either Na<sub>2</sub>CO<sub>3</sub> or NaOH soln., but on treatment with concd. H<sub>2</sub>SO<sub>4</sub> yielded a yellow soln., which turned red in Na<sub>2</sub>CO<sub>3</sub> and yellow in NaOH. VI (90 ml. of a 0.02 molar soln.) in EtPh decompd. completely in 10 days at 30.degree. to give 95% IX. The much faster rate of decompn. of VI in PhEt than in cumene may be due to the fact that the .alpha.-cumyl radical is relatively inert and dimerized, whereas the .alpha.-phenethyl radical behaves like the polystyrene radical and induces the decompn. of VI. VII (400 ml.) contg. 0.008 mole VI or I was kept in a stoppered bottle with passage of N at 30.degree. and samples were drawn periodically and analyzed for peroxide content and for degree of polymerization by the following method: The sample was poured into 50 ml. 95% alc., left at room temp. overnight, the pptd. polymer collected, washed with MeOH, dried at 80.degree., weighed, and the mol. wts. detd. by the elevation in the b.p. of C<sub>6</sub>H<sub>6</sub>. Some of the samples taken at 30.degree. were heated at a higher temp. before analysis for polymer formation in order to show that if the extent of polymerization was low at this stage, it was because all the initiator had not yet reacted rather than because the initiator had been decompd. without initiating the reaction. The following results were obtained (condition, polymer formed in g./10 ml. sample for control, VI, and I given): original samples, -, -, -; after 66 hrs. at 30.degree., 0.025, 0.755, 4.200; after 66 hrs. at 30.degree. followed by 24 hrs. at 50.degree., 0.110, 4.510, 4.660; after 211 hrs. at 30.degree., 0.114, 5.500, 4.610; after 211 hrs. at 30.degree. followed by 20 hrs. at 80.degree., 1.130, 5.590, 4.630. Both I and VI behaved differently when



dissolved in VII than when in the cryst. state. The formation of the H bonds which stabilize VI was hindered and also suppressed the concerted reaction of I by making the attainment of the favorable configuration less likely.

IT X-rays

(diffraction of, by p-nitroperoxycarbanilic acid deriv. decompn. products)

IT \*\*\*Ultraviolet\*\*\* and visible, spectra

(of p-nitroperoxycarbanilic acid deriv. decompn. products)

IT Reaction kinetics and(or) velocity

(of tert-butyl-N-methyl-p-nitroperoxycarbanilate decompn.)

IT 42930-08-5, Peroxycarbanilic acid, p-nitro-, tert-butyl ester

108668-99-1, Peroxycarbanilic acid, N-methyl-p-nitro-, tert-butyl ester (prepn. and thermal decompn. of)

IT 6973-12-2, Aniline, N-methylene-p-nitro- 39809-82-0, Methanedianiline,

N,N'-bis(p-nitrophenyl)- 98276-82-5, Hydroxylamine, N-methyl-N-(p-nitrophenyl)- 103640-04-6, Hydroxylamine, O-tert-butyl-N-methyl-N-(p-nitrophenyl)-

(prepn. of)

L13 ANSWER 76 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1957:4583 CAPLUS

DN 51:4583

OREF 51:918h-i,919a-d

ED Entered STN: 22 Apr 2001

TI Aroyl \*\*\*resorcinol\*\*\* compounds

IN Loria, Anthony; Sawdey, Geo. W.

PA Eastman Kodak Co.

DT Patent

LA Unavailable

CC 5 (Photography)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2756253		19560724	US 1954-408576	19540205

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2756253	IPCR	G03C0001-815 [I,A]; G03C0001-815 [I,C]
	NCL	562/053.000; 560/027.000; 562/441.000; 564/329.000

AB Certain \*\*\*ultraviolet\*\*\* light absorbers, when used in coatings, afford considerable protection for multi-layer color photographic materials from fading or yellowing by the action of ambient daylight. The absorbers, all amide derivs. of 4-(3-aminobenzoyl) \*\*\*resorcinol\*\*\*, are best applied in a solvent with a colloidal binder as a supercoating or, perhaps, over a particular sub-layer subject to harmful effects of \*\*\*ultraviolet\*\*\* light. Also, the absorber can be applied as a constituent of one layer. Thus, 4-hexylresorcinol (I) (cf. Desai and Waravdekar, C.A. 36, 905) was condensed by the Hoesch reaction with 1,3-CNC6H4NO2 to yield 4-(3-nitrobenzoyl)-6-hexylresorcinol, m. 95-6.degree., which was catalytically reduced to produce the corresponding amine, 4-(3-aminobenzoyl)-6-hexylresorcinol (II), crystals from 2:1 benzene-heptane, m. 68-70.degree.. In 25 ml. of CH3CN was dissolved 4.2 g. II and the soln. mixed with a soln. of 3.84 g. .alpha.-(3,5-dicarbomethoxyphenoxy)acetyl chloride (III) in 25 ml. CH3CN. The temp. rose 10.degree. as HCl was evolved. The mixt. was heated at 65.degree. for 10 min., allowed to stand 1 hr., filtered, cooled to 5-10.degree., and the dimethyl ester of the pptd. product collected on a filter and recrystd. from CH3CN, yielding 4.8 g. of the dimethyl ester (IV) of the desired product, white plates, m. 146-8.degree.. Suspension of IV in alc. alk. for several min. at room temp. with shaking caused spontaneous hydrolysis of the dimethyl ester yielding the Na salt of 4-{3-[.alpha.-(3,5-dicarboxyphenoxy)acetamido]benzoyl}-6-hexylresorcinol. Substitution of 6-dodecyl \*\*\*resorcinol\*\*\* for I produced the Na salt of 4-{3-[.alpha.-(3,5-dicarboxyphenoxy)acetamido]benzoyl}-6-dodecylresorcinol, the dimethyl ester of which melted at 146-8.degree.. Reaction of II with 3-chlorosulfonylbenzoyl chloride in place of III gave a compd. (V) which was crystd. twice from C6H6, pale-yellow, m. 150-1.degree.. Suspension of V in alc. alkali yielded the Na salt of 4-[3-(3-sulfobenzamido)benzoyl]-6-hexylresorcinol. Application was as follows: 1 g. V was dissolved in a mixt. of 6 ml. EtOH and 5 ml. of aq. 10% NaOH and the soln. added to 89 ml. water. After adjustment of the pH

to 7 with citric acid, processed films were bathed in the soln. for 10 min., rinsed, and dried. Measurements showed that substantial density to \*\*\*ultraviolet\*\*\* light had been acquired. Treated films showed no deterioration of the photographic \*\*\*image\*\*\* upon standing in daylight. Cf. U.S. 2,719,086 (C.A. 50, 2335e).

IT Photography, color  
( \*\*\*images\*\*\* , aroyl \*\*\*resorcinol\*\*\* compds. for protection  
of, against \*\*\*ultraviolet\*\*\* light)  
IT 108-46-3, \*\*\*Resorcinol\*\*\*  
(aroyl derivs., as photographic light filters)  
IT 102010-65-1, Benzophenone, 3'-amino-5-hexyl-2,4-dihydroxy- 102178-43-8,  
Benzophenone, 5-hexyl-2,4-dihydroxy-3'-nitro- 108517-74-4, Isophthalic  
acid, 5-[[[m-(5-dodecyl-.beta.-resorcyloyl)phenyl]carbamoyl]methoxy]-,  
dimethyl ester 110176-74-4, Benzenesulfonic acid, m-[[m-(5-hexyl-.beta.-  
resorcyloyl)phenyl]carbamoyl]- 116976-38-6, Isophthalic acid,  
5-[[[m-(5-dodecyl-.beta.-resorcyloyl)phenyl]carbamoyl]methoxy]-  
117273-05-9, Isophthalic acid, 5-[[[m-(5-hexyl-.beta.-  
resorcyloyl)phenyl]carbamoyl]methoxy]- 117876-91-2, Isophthalic acid,  
5-[[[m-(5-hexyl-.beta.-resorcyloyl)phenyl]carbamoyl]methoxy]-, dimethyl  
ester  
(prepn. of)

L13 ANSWER 77 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1955:82994 CAPLUS

DN 49:82994

OREF 49:15577d-h

ED Entered STN: 22 Apr 2001

TI Recent progress in the diazotype process. III. Photodiazotype process on  
wool and silk

AU Mester, Laszlo

CS Tech. Univ., Budapest

SO Science et Industries Photographiques (1955), 26, 354-62

CODEN: SIPHAC; ISSN: 0371-0378

DT Journal

LA Unavailable

CC 5 (Photography)

AB cf. C.A. 49, 11473d. Wool and silk are colored bright-yellow by treatment  
with HNO<sub>2</sub>. The reaction has been interpreted by various authors as a  
diazotization or as the introduction of a nitroso group. Expts. were made  
to decide between these views. The absorption spectrum of the  
HNO<sub>2</sub>-treated wool (I) or silk (II) has the same absorption max. and form  
as that of 1-diazo-2-naphthol-4-sulfonic acid (III). I and II lose their  
bright-yellow color on exposure to sunlight or Hg-lamp light. Exposed  
samples produced distinctly different colors from the unexposed samples  
when treated with 2-naphthol in alk. soln., a salt of H acid in neutral  
medium, or solns. of phloroglucinol (IV) or \*\*\*resorcinol\*\*\* (V) in  
the presence of NiSO<sub>4</sub> and developed by NH<sub>3</sub>. The exposed samples gave a  
deep-violet color when coupled with a diazo compd. in the presence of NH<sub>3</sub>;  
the unexposed remained almost unchanged. Photolysis of many diazo compds.  
is known to give phenols capable of subsequent coupling with diazo compds.  
The coupling activity of I and II towards IV, V, and Na  
2-naphthol-3,6-disulfonate was detd. and compared with the coupling  
activity of diazotyrosine (VI), III, p-diazodiphenylamine, and  
p-diazodimethylaniline. The coupling activity of I and II was similar to  
that of III and VI. The dye formed by coupling I and II with IV was extd.  
from the samples by treatment with 10% NaOH and compared with the dye  
formed by coupling VI and IV. The \*\*\*ultraviolet\*\*\* absorption  
spectra were identical. Conclusion: the light-sensitive agent in I and II  
is formed by diazotization of the tyrosine which is a constituent of wool  
and silk. Introduction of a nitroso group occurs to only a slight extent  
and gives a product which is practically insensitive to light. Continuous  
tone \*\*\*images\*\*\* can be formed by exposure of I or II through a  
negative.

IT Silk

Wool

(diazotype process on)

IT Spectra

(of nitrous acid-treated silk and wool)

IT Diazotization

(of tyrosine in HNO<sub>2</sub>-treated silk and wool)

IT Diazotype process

(on silk and wool)

IT Tyrosine, diazo-  
(reaction with silk and wool)  
IT 60-18-4, Tyrosine  
(diazotization in HNO2-treated silk and wool)  
IT 135-19-3, 2-Naphthol 148-75-4, 2-Naphthol-3,6-disulfonic acid  
19096-37-8, Diphenylamine, 4-diazo- 856090-90-9, 2-Naphthol-3,6-  
disulfonic acid, 8-amino- 856310-53-7, Aniline, p-diazo-N,N-dimethyl-  
(reaction with silk and wool)  
IT 108-73-6, Phloroglucinol 7782-77-6, Nitrous acid  
(reactions of, with silk and wool)  
IT 84-23-1, Naphth[1,2-d][1,2,3]oxadiazole-5-sulfonic acid 861048-00-2,  
2-Naphthol-4-sulfonic acid, 1-diazo-  
(spectrum of, and its similarity to that of HNO2-treated silk and wool)

L13 ANSWER 78 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1951:38217 CAPLUS  
DN 45:38217  
OREF 45:6521i,6522a-b  
ED Entered STN: 22 Apr 2001  
TI Diazotypes containing 6-hydroxy-1,3-benzoxathiol-2-one and its derivatives  
IN Von Glahn, Wm. H.; Stanley, Lester N.  
PA General Aniline & Film Corp.  
DT Patent  
LA Unavailable  
CC 5 (Photography)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2547843		19510403	US 1948-56044	19481022

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2547843	IPCR	G03C0001-52 [I,C]; G03C0001-58 [I,A]
	NCL	430/182.000; 430/148.000; 430/163.000; 430/183.000; 430/191.000; 549/033.000

AB Azo dye coupling components useful in two-component diazotypes may be prepared by reacting \*\*\*resorcinol\*\*\* or suitable derivatives with KCNS in the presence of CuSO4, pptg. the iminothiocarbonate of the \*\*\*resorcinol\*\*\* compd., and hydrolyzing in a warm weakly acid soln. The aminoalkyl deriv. is prepd. by converting a \*\*\*resorcinol\*\*\* compd. into the corresponding 6-hydroxy-1,3-benzoxathiol-2-one (I) which is then treated with an aldehyde and a secondary amine in accordance with the Mannich reaction. Azo coupling components of these types include I, 5-chloro-6-hydroxy-1,3-benzoxathiol-2-one and dimethylaminomethyl-4-methyl-6-hydroxy-1,3-benzoxathiol-2-one. A typical coating formulation is prepd. with 3.2 g. I, 4.0 g. p-diethylaminobenzenediazonium chloride-ZnCl2 double salt, 8.0 g. citric acid, 4.0 g. thiourea, 10 cc. isopropanol, 5.0 cc. glycol, 0.5 g. saponin, and H2O to make 100 cc. The coating produced has excellent stability against precoupling and following exposure and development will give \*\*\*images\*\*\* of a dark reddish brown shade having a good opacity to \*\*\*ultraviolet\*\*\* light, excellent visual d. and good fastness to washing, light, and offset.

IT Diazotype process  
(6-hydroxy-1,3-benzoxathiol-2-one and its derivs. for)  
IT Carbonic acid, thiol-, 4-hydroxy-o-phenylene ester  
(and its derivs., in diazotype process)  
IT 1,3-Benzoxathiol-2-one, (dimethylaminomethyl)-6-hydroxy-4-methyl-  
Carbonic acid, thiol-, esters (cyclic)  
\*\*\*Resorcinol\*\*\*, (dimethylaminomethyl)-4-mercapto-5-methyl-,  
3,4-(thiolcarbonate)  
(in diazotype process)  
IT 4991-65-5, 1,3-Benzoxathiol-2-one, 6-hydroxy- 4991-65-5,  
\*\*\*Resorcinol\*\*\*, 4-mercapto-, 3,4-(thiolcarbonate) 22791-11-3,  
1,3-Benzoxathiol-2-one, 5-chloro-6-hydroxy-  
(in diazotype process)  
IT 857757-73-4, \*\*\*Resorcinol\*\*\*, 4-chloro-6-mercapto-,  
1,6-(thiocarbonate)  
(prepn. of)

L13 ANSWER 79 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1948:33756 CAPLUS  
DN 42:33756

OREF 42:7174g-i,7175a-i  
ED Entered STN: 22 Apr 2001  
TI Color photographic process  
IN Husek, Helen P.  
PA Polaroid Corp.  
DT Patent  
LA Unavailable  
CC 5 (Photography)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2444567		19480706	US 1945-612875	19450827

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2444567	IPCR	G03C0009-00 [I,C]; G03C0009-04 [I,A]
	NCL	430/371.000; 430/368.000; 430/374.000

AB Processes are described for forming black and white, and single and multicolor reproductions in 2 or 3 dimensions in carriers sensitized with ferric salts. Dye \*\*\*image\*\*\* formation in the carrier, sensitized with ferric salts, is effected by exposing the carrier, developing the carrier to form a mordant or metallic salt \*\*\*image\*\*\* of Prussian blue in the exposed portion, mordanting a dye base of the Prussian blue \*\*\*image\*\*\*, and converting the dye base to a dye by treating the dye base with a coupler and removing the mordant or metallic salt \*\*\*image\*\*\*. In producing light-polarizing \*\*\*images\*\*\*, each plastic carrier layer for a color \*\*\*image\*\*\* is a sheet of transparent, hydrophilic, high-mol., linear polymer, which forms a dichroic sorption complex with org. dyes and possesses a high tensile strength, e.g., polyvinyl alc. Suitable transparent support material comprises a cellulose plastic, e.g., cellulose acetate, or a condensation superpolymer, e.g., polyamide or nylon-type plastic. In using a film having several carriers (polyvinyl alc. and regenerated cellulose) in each of which one or more \*\*\*images\*\*\* is formed, the outside carrier is sepd. from the adjoining one by a layer of light-control material or dye, or an exposure-control dye incorporated in the carriers by imbibition. Tartrazine (yellow dye) can be used for exposure control as it absorbs light. H2O-sol. dyes, which wash out during processing, can be replaced by imbibition prior to completion of \*\*\*image\*\*\* formation and H2O-insol. dyes should be removed from the dye-contg. layers after \*\*\*image\*\*\* formation by bleaching with an agent which does not affect the dye of the formed color \*\*\*images\*\*\*. An \*\*\*ultraviolet\*\*\*-light absorber (transparent in the visible range of the spectrum) may be used as a barrier when incorporated in a transparent layer, e.g., furfural azine and cinnamaldehyde azine. When an \*\*\*ultraviolet\*\*\*-light-absorbing barrier is used between a plurality of layers, selective exposure is made with \*\*\*ultraviolet\*\*\* light to which the ferric salts are sensitive. A color \*\*\*image\*\*\* formed in a film comprises a support and carrier sensitized with ferric salts by imbibition of the film in suitable solns. In an example, soln. A contains 175 g. ferric NH4 citrate in 500 cc. H2O, 94 g. ferric NH4 oxalate in 500 cc. H2O, 150 g. ferric Na oxalate in 500 cc. H2O, and 25 g. ferric oxalate and H2O to make 2000 cc.; soln. B contains 94 g. K3Fe(CN)6 and H2O to make 2000 cc. Solns. A and B are mixed in equal parts and imbibed in the sensitized layer, or K3Fe(CN)6 in soln. B is added to the plastic layer during development of the film. The carrier layer is exposed through a color record by using a Hg vapor lamp, which converts the ferric to ferrous salts in the exposed portions and when treated with H2O is changed to ferric ferrocyanide (Prussian blue) to provide a metallic salt \*\*\*image\*\*\* or mordant in the carrier. Unexposed ferric salts are washed out of the film by the H2O used in forming the Prussian blue \*\*\*image\*\*\*. Dye bases comprise Naphthinal Diazo Blue B salt (tetrazotized and stabilized bianisidine), Diazo Black B salt (p-diazodiphenylamine sulfate) and those formed by diazotizing benzidine or 4,4-diaminodiphenylamine or diaminostilbene or its disulfonic acid deriv. These dye bases when coupled provide dyes which display dichroism and are suitable for forming light-polarizing \*\*\*images\*\*\*. Diazo dye bases, e.g., diazotized aniline and naphthionic acid, when coupled appropriately give a nondichroic dye. Couplers for a magenta \*\*\*image\*\*\* comprise \*\*\*resorcinol\*\*\*, orcinol, naphthionic acid, and m-aminophenol; a cyan \*\*\*image\*\*\*, SS acid (8-amino-1-naphthol-5,7-disulfonic acid); and a yellow \*\*\*image\*\*\*, phenol, and m-cresol. For

black and white reproduction, diazotized benzidine when coupled with 7-amino-1-naphthol-3-sulfonic acid gives a black dichroic dye. These couplers are H<sub>2</sub>O-sol. and are made into solns. which are imbibed in the carrier. Couplers for color work comprise \*\*\*resorcinol\*\*\*, SS acid, and phenol and are imbibed for 1 min. A coupling soln. for a magenta \*\*\*image\*\*\* consists of: 3.5 g. \*\*\*resorcinol\*\*\*, 5 cc. NaOH (10% aq. soln.), and 100 cc. H<sub>2</sub>O; for a cyan \*\*\*image\*\*\*, 1.5 cc. SS acid, 2 cc. NaOH (10% aq. soln.), and 100 cc. H<sub>2</sub>O; and for a yellow \*\*\*image\*\*\*, 3 g. phenol, 2 cc. NaOH (10% aq. soln.), and 100 cc. H<sub>2</sub>O. A film having 2 \*\*\*image\*\*\* carriers is used in 2- or 3-dimensional multicolor reproduction and in 2-dimensional light-polarizing or nonpolarizing multicolor \*\*\*images\*\*\* to lead to simplification of processing. If a 2-color reproduction is made, the \*\*\*image\*\*\* formation is completed, but if a 3-color reproduction is made the film is resensitized with ferric salts; either layer is exposed through a 3rd color record and processed to form a third color component in the film. In the formation of a plurality of color \*\*\*images\*\*\* the treatment of each color \*\*\*image\*\*\* is carried out after all \*\*\*image\*\*\* formation has been completed and the last metallic salt \*\*\*image\*\*\* removed. If 1 \*\*\*image\*\*\* of a suitable color is formed, this treatment is used following the removal of the mordant \*\*\*image\*\*\* for that color \*\*\*image\*\*\*. Treatment is carried out by immersing the film for 30-60 sec. in a buffer soln. pH 6.8, consisting of 25 cc. citric acid (0.1 M aq. soln.) and 75 cc. Na<sub>2</sub>HPO<sub>4</sub> (0.2 M aq. soln.). The film is dried and ready for use.

IT Photography

(sensitization, by ferric salts)

IT Photography, color

(sensitization, with ferric salts)

L13 ANSWER 80 OF 80 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1938:31717 CAPLUS

DN 32:31717

OREF 32:4361f-i,4362a-c

ED Entered STN: 16 Dec 2001

TI The chemical identification of artificial resins used in lacquers and varnishes

AU Wagner, H.; Schirmer, Herm.

SO Farben-Zeitung (1938), 43, 131-3,157-8

CODEN: FAZEAO; ISSN: 0367-1755

DT Journal

LA Unavailable

CC 26 (Paints, Varnishes, and Lacquers)

AB A rigorous identification is not always possible. Coumarone resin. The dry distillate gives an orange Storch-Morawski test. If colophony interferes by giving a purple color, a milky purple fluorescence under \*\*\*ultraviolet\*\*\* light indicates the presence of coumarone resin. Aldehyde resins. After first sepg. the resin from saponifiable material and nitrocellulose, dry distn. produces a suffocating odor resembling that of HOAc. Ketone resin. (Cyclohexanone resin). The isolated unsaponifiable resin is detected by the color reaction with diphenylamine sulfate soln. and by a wine-red Storch-Morawski test. Urea-formaldehyde resins. After removal of solvents, the sample on refluxing with concd. KOH or NaOH gives NH<sub>3</sub>, or with 20% H<sub>2</sub>SO<sub>4</sub> it gives CH<sub>2</sub>O. Phenol resins. After removal of solvents, alkali fusion liberates phenol, which forms red dyes on coupling with diazotized p-nitroaniline or with Fast Red Salt 3 GL. Phthalate resins. (Glyptals, alkyds, etc.). Dry distn. produces phthalic anhydride crystals and the suffocating odor of decomposing glycerol. The phthalate radical can also be detected by the \*\*\*resorcinol\*\*\* test or as K phthalate (cf. C. A. 31, 7271.8). Colophony-maleic acid resins. Attempts at detecting the maleate radical by sapon. and pptn. with Ba(OH)<sub>2</sub> gave uncertain results. The Storch-Morawski test gives a wine-red color rapidly going to brown. However, cyclohexanone resin gives a similar test and ester gum gives a violet color which \*\*\*masks\*\*\* the wine-red color. Vinyl type of resin. Dry distn. yields condensates having characteristic fluorescence under \*\*\*ultraviolet\*\*\* light. Such distillate is sol. in concd. caustic soln. only if derived from polyacrylic resins. Polyvinyl esters saponify to polyvinyl alc., which shows a large increase in viscosity when its soln. in a little hot water is treated with cold satd. borax soln. Chlorinated rubber. Fusion with a mixt. of K<sub>2</sub>CO<sub>3</sub> and Na<sub>2</sub>CO<sub>3</sub> produces a typical odor and converts the Cl into ionizable form readily detectable

with AgNO<sub>3</sub>. Chlorinated diphenyl and vinyl chloride resins also give chloride ion but not the typical odor. Nitrocellulose. The nitrocellulose is first pptd. with benzene, then redissolved and finally poured as a layer on a 1% soln. of diphenylamine sulfate. A blue ring is formed. Cellulose acetate. Heating with dil. H<sub>2</sub>SO<sub>4</sub> gives an odor of HOAc. Cellulose ethers. Simple tests have not been developed. Benzylcellulose on heating gives an odor of BzH. Tabulations of Storch-Morawski tests and results of examn. of resins, etc., under \*\*\*ultraviolet\*\*\* light are given.

IT Rubber  
 (chlorinated, identification of)  
 IT Cellulose ethers  
 Phenol condensation products  
 Resinous products  
 (identification of)  
 IT Drying  
 (of sewage sludge, etc.)  
 IT Vinyl compounds  
 (polymers of, identification of)  
 IT Rosin  
 (reaction products of, with maleic acid, identification of)  
 IT 9004-35-7, Cellulose acetate 9004-70-0, Nitrocellulose 9011-05-6,  
 Urea, condensation product with HCHO  
 (identification of)  
 IT 110-16-7, Maleic acid  
 (resinous products with colophony, identification of)

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(FILE 'HOME' ENTERED AT 11:29:02 ON 16 MAR 2006)

FILE 'CAPLUS' ENTERED AT 11:29:07 ON 16 MAR 2006

L1 1755 S (FRIES OR PHOTOFRIES) (5A) (REARRANG?)  
 L2 47 S L1 AND (LASER OR PATTERN OR IMAGE OR IMAGING OR MASK OR PHOTO  
 L3 47 S L1 AND (LASER OR PATTERN OR IMAGE OR IMAGING OR MASK OR PHOTO  
 L4 1755 S (FRIES OR PHOTOFRIES OR "PHOTO-FRIES") (5A) (REARRANG?)  
 L5 21 S (HOLOGRA?) AND (REARRANG?)  
 L6 1 S L1 AND PATTERNING  
 L7 83 S L1 AND (DATA OR STORAGE)  
 L8 29076 S RESORCINOL  
 L9 900 S L8 AND (LASER OR PATTERN OR IMAGE OR IMAGING OR MASK OR PHOTO  
 L10 320 S L9 AND (LIGHT OR LASER OR UV OR ULTRAVIOLET)  
 L11 176 S L9 AND (LASER OR UV OR ULTRAVIOLET)  
 L12 702 S L8 AND (PATTERN OR IMAGE OR IMAGING OR MASK OR PHOTOMASK OR H  
 L13 80 S L12 AND (LASER OR UV OR ULTRAVIOLET)

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